

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

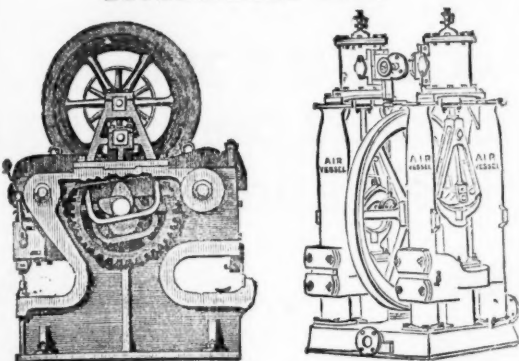
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No. 2233.—Vol. XLVIII.

LONDON, SATURDAY, JUNE 8, 1878.

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BAR SHEARS.**
ESTABLISHED 1852.



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SALFORD, MANCHESTER.

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cylinders, &c. 130
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This alloy has very great tensile strength
" No. VII., for hydraulic pumps, valves, and
plungers, piston rings, bushes and bearings,
for steel shafts 140
" No. XI., special phosphor-bronze bearing metal,
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The prices of castings vary according to the pattern, the quantity required, and
the alloy used.

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DARK and PALE OILS for MACHINERY, RAILWAY, and MINING
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CRANSTONHILL ENGINE WORKS, GLASGOW.
PATENTERS AND SOLE MANUFACTURERS OF
CHAPLINS' PATENT STEAM CRANES, HOISTS,
LOCOMOTIVES, AND OTHER ENGINES AND BOILERS.
LONDON HOUSE:—
MCKENDRICK, BALL, AND CO.,
51, QUEEN VICTORIA STREET, LONDON, E.C.

PARIS, BRONZE MEDAL, 1867. ORDER OF THE CROWN OF PRUSSIA. FALMOUTH, SILVER MEDAL, 1867.

A DIPLOMA—HIGHEST OF ALL AWARDS—given by the
Geographical Congress, Paris, 1875—M. Favre, Contractor, having
exhibited the McKean Drill alone as the MODEL BORING MACHINE
for the ST. GOTHARD TUNNEL.

SILVER MEDAL of the Highland and West of Scotland
Agricultural Society, 1875—HIGHEST AWARD.

At the south end of the St. Gothard Tunnel, where
THE MCKEAN ROCK DRILLS

Are exclusively used, the advance made during eight consecu-
tive weeks, ending February 7, was 24-90, 27-60, 24-80, 26-10,
28-30, 27-10, 28-40, 28-70 metres. Total advance of south head-
ing during January was 121-30 metres, or 133 yards.

In a series of comparative trials made at the St. Gothard Tun-
nel, the McKean Rock Drill continued to work until the pres-
sure was reduced to one-half atmosphere (7½ lbs.), showing
almost the entire motive force to be available for the blow
against the rock—a result of itself indicating many advantages.

The GREAT WESTERN RAILWAY has adopted these
Machines for the SEVERN TUNNEL; the LONDON AND
NORTH-WESTERN RAILWAY for the FESTINIOG TUN-
NEL; and the BRITISH GOVERNMENT for several Public
Works. A considerable number of Mining Companies are now
using them. Shafts and Galleries are driven at from three to
six times the speed of hand labour, according to the size and
number of machines employed, and with important saving in
cost. The ratio of advantage over hand labour is greatest
where the rock is hardest.

These Machines possess many advantages, which give them
a value unapproached by any other system of Boring Machine.

THE MCKEAN ROCK DRILL IS ATTAINING GENERAL
USE THROUGHOUT THE WORLD FOR MINING, TUN-
NELLING, QUARRYING, AND SUB-MARINE BORING.

The MCKEAN ROCK DRILLS are the most powerful—the
most portable—the most durable—the most compact—of the
best mechanical device. They contain the fewest parts—have
no weak parts—act without SHOCK upon any of the operat-
ing parts—work with a lower pressure than any other Rock
Drill—may be worked at a higher pressure than any other
—may be run with safety to FIFTEEN HUNDRED STROKES
PER MINUTE—do not require a mechanic to work them—are
the smallest, shortest, and lightest of all machines—will give
the longest feed without change of tool—work with long or
short stroke at pleasure of operator.

The SAME Machine may be used for sinking, drifting, or
open work. Their working parts are best protected against
grit and accidents. The various methods of mounting them
are the most efficient.

N.B.—Correspondents should state particulars as to
character of work in hand in writing us for information,
on receipt of which a special definite answer, with
reference to our full illustrated catalogue, will be sent.

PORTABLE BOILERS, AIR COMPRESSORS, BORING STEEL,
IRON, AND FLEXIBLE TUBING.

The McKean Drill may be seen in operation daily in London.

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GLASGOW.

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OIL REFINERS,
ROSIN OIL DISTILLERS,
GREASE AND VARNISH MANUFACTURERS,
HOLT TOWN,
MANCHESTER.

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DUNN'S ROCK DRILL,
AND
AIR COMPRESSORS.

FOR DRIVING BED ROCK
TUNNELS, SINKING
SHAFTS, AND PERFORMING
OPEN FIELD OPERATIONS,
IS THE
CHEAPEST, SIMPLEST,
STRONGEST, & MOST EFFECTIVE
DRILL IN THE WORLD.

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(LIMITED).

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THE
PATENT SELF-ACTING MINERAL
DRESSING MACHINE COMPANY
(LIMITED).

T. CURRIE GREGORY, C.E., F.G.S.

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LONDON: 52, QUEEN VICTORIA STREET, E.C.

IMPORTANT NOTICE TO MINE PROPRIETORS.

MR. GEORGE GREEN, ENGINEER, ABERYSTWTH,
SUPPLIES MACHINES under the above Company's Patents for
DRESSING all METALLIC ORES. Dressing-floors having these Machines pos-
sess the following advantages:—

- 1.—THEY ARE CHEAPER THAN ANY OTHER KIND IN FIRST OUTLAY.
- 2.—ONLY ABOUT ONE-FOURTH OF THE SPACE USUALLY OCCUPIED
BY DRESSING-FLOORS IS REQUIRED.
- 3.—FROM 60 TO 70 PER CENT. OF THE LABOUR IN DRESSING, AND
FROM 5 TO 10 PER CENT. OF ORE OTHERWISE LOST, IS SAVED.
- 4.—THEY ARE THE ONLY MACHINES THAT MAKE THE ORE CLEAN
FOR MARKET AT ONE OPERATION.

They have been supplied to some of the principal mines in the United Kingdom
and abroad—viz.,

The Greenside Mines, Patterdale, Cumberland; London Lead Company's Mines,
Darlington, Colberry, Nanthead, and Bollyhope; the Stoncroft and Greyside
Mines, Hexham, Northumberland; Wanlockhead Mines, Abington, Scotland (the
Duke of Buccleuch's); Bewick Partners, Haydon Bridge; the Old Darren, Eschal-
mwyn, and Ystumtuen Mines, in Cardiganshire; Mr. Beaumont's W.B. Mines,
Darlington; also Mr. Sewell, for Argenteiferous Copper Mines, Peru; the Brats-
berg Copper Mines, Norway, and Mines in Italy, Germany, United States of
America, and Australia, from all of whom certificates of the complete efficiency of
the system can be had.

WASTE HEAPS, consisting of refuse chads and skimpings of a
former washing, containing a mixture of lead, blende, and sulphur,
DRESSED TO A PROFIT.

Mr. BAINBRIDGE, C.E., of the London Company's Mines, Middleton-
in-Teesdale, by Darlington, writing on the 20th March, 1876, says—"The yearly
profit on our Nanthead waste heaps amounted last year to £200, besides the ma-
chinery being occupied for some months in dressing ore-stuff from the mines. Of
course, if it had been wholly engaged in dressing wastes our returns would have
been greater; but it is giving us every satisfaction, and bringing the waste heaps
into profitable use, which would otherwise remain dormant."

Mr. T. B. STEWART, Manager of the Duke of Buccleuch's Mines,
Wanlockhead, Abington, N.B., writing on 20th March, 1876, says—"I have much
pleasure in stating that a full and superior set of your Ore Dressing Machinery has
been at work at these mines for fully a month, and each day as the moving parts
become smoother, and those in charge understand the working of the machinery
better, it gives increasing satisfaction, the ore being dressed more quickly, cheaply,
and satisfactorily than by any other method."

Mr. BAINBRIDGE, speaking of machinery supplied Colberry Mines,
says—"Your machinery saves fully one-half on old wages, and vastly more on the
wages we have now to pay. Over and above the saving in cost is the saving in ore,
which is a much short of 10 per cent."

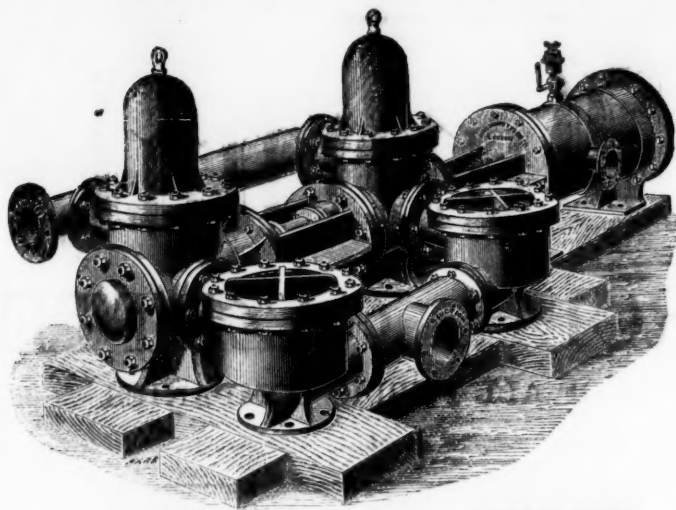
GREENSIDE MINE COMPANY, Patterdale, near Penrith, say—"The
separation which they make is complete."

Mr. MONTAGUE BEALE says—"It will separate ore, however close
the mechanical mixture, in such a way as no other machines can do."

Mr. C. DODSWORTH says—"It is the very best for the purpose,
and will do for any kind of metallic ores—the very thing so long needed for dress-
ing floors."

Drawings, specifications, and estimates will be forwarded on application to—
GEORGE GREEN, M.E., ABERYSTWTH, SOUTH WALES.

THE "UNIVERSAL" STEAM PUMP, ADAPTED FOR HEAVY DUTIES AND HIGH LIFTS.



ECKINGTON, February 4th, 1877.
Messrs. HAYWARD TYLER and Co.,

GENTLEMEN,
In reply to your enquiry, the 15 by 7 Long Stroke Pump Messrs. Hayward Tyler and Co. supplied us with is working remarkably well; 7 feet suction, and forcing the water 180 feet perpendicular, with 40 lbs. of steam. Before putting this engine in we had one H.P. Pumping Engine, 50 inch cylinder, 9 feet stroke, and firing six boilers, 36 feet by 4 feet, to drive it, now we only require two of the above boilers to do the same work with much less annoyance and attention.
I am, Gentlemen, yours truly,
JOHN MARPLES,
Engineer to J. and G. WELLS, Eckington Collieries.

TESTIMONIALS.

THE PATENT ANTHRACITE COKE CO.,
SWANSEA, 24th January, 1877.

Messrs. HAYWARD TYLER and Co.,
DEAR SIR,—In reply to yours of the 15th instant, I beg to give you the following particulars of what your Universal 21 inch by 6 inch is doing at one of our collieries. The vertical height of column is 400 feet, steam pressure 40 lbs. per square inch, water pumped 3500 gallons per hour. Average work per day, 16 hours, or 56,000 gallons per day.
I am, yours truly,
WALTER LEWIS.

YATE COLLIERIES, near CHIPPING SODNEY,
January 24th, 1877,
Messrs. HAYWARD TYLER and Co.,

GENTLEMEN,
In reply to yours of the 15th inst. (which absence prevented my attending to earlier), I am very pleased to add a testimonial to the efficiency of your "Universal" Steam Pump. The one you supplied to us has worked most satisfactorily for the past six months, without giving us the least trouble. It is lifting over 2,000 gallons an hour up a perpendicular height of 480 feet—going 30 strokes per minute, with a steam pressure of 30 lbs. per square inch—boiler 340 yards from pump. I can strongly recommend it as the most efficient pump for high lifts ever seen. I shall be very pleased to give information to any of your friends, or take them to view it working.
Yours faithfully,
EDWD. W. B. MONKS, Managing Director.

SOLE MAKERS,

HAYWARD TYLER AND CO., Whitecross-street, LONDON.

JOSEPH FENTON & SONS,

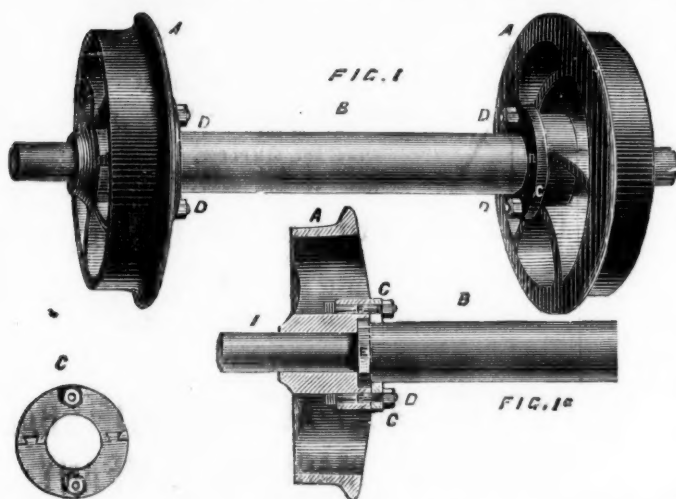
MANUFACTURERS OF

CAST STEEL AND FILES,
AND

CRUCIBLE CAST STEEL CASTINGS,

Sykes Works, Eyre-st. & Bridge-st., Sheffield. London Office: 118, Cannon-st., E.C.

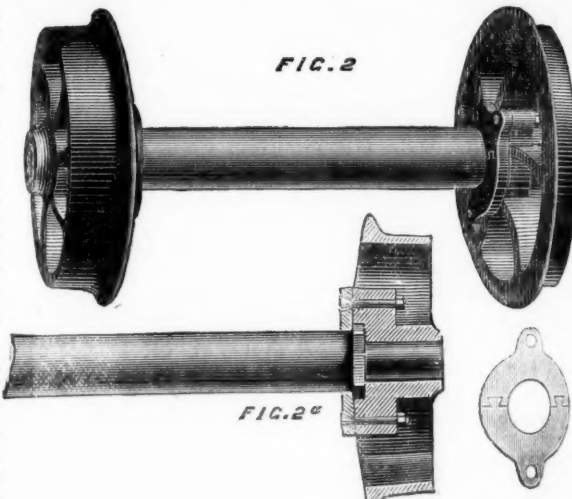
A New Patent Method of Fitting up Wheels and Axles.



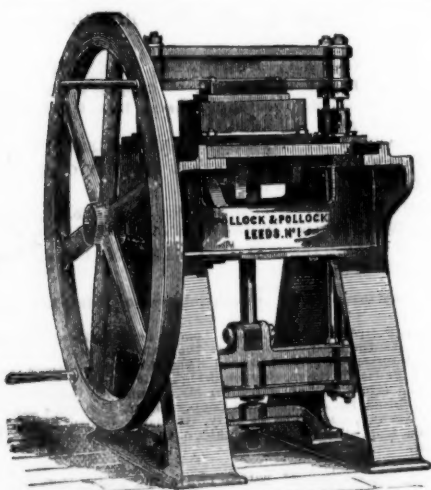
Figs. 1 and 1a show a longitudinal view and plan of a pair of corf wheels and axles fitted up for outside bearings, and Figs. 2 and 2a for inside bearings. A A are the wheels; B, is the axle; C C, the washers; D D, the bolts; E, the collar on axle B; and F, the recessed boss in the wheel.

The wheel is cast with a recessed boss in the inside, made to any shape, corresponding in shape and depth with a collar formed on the axle, which is forged of solid steel; the axle is secured into the recess partly by being sufficiently tightly fitted to require driving home with a hammer, and partly by the washer. Around the axle adjoining the boss is fixed the washer, made in two parts and dovetailed, so as to allow of being fixed after the collar has been forged on the axle. The washer is secured to the boss by bolts and nuts, both in outside and inside bearings; in the case of inside, by means of lugs cast on the boss, and the washer made of crucible cast steel. The only tool required for fitting is an ordinary spanner for outside bearings, and a box spanner for inside bearings.

Now what are the advantages of this method? You secure a simple way of fitting—it can be done by anyone who has seen it—the only tool required being a spanner; the wheels can be detached from or secured to the axle in a few minutes. The next



advantage is the perfect solidity attained, the wheel and axle practically becoming as one piece. The durability results from the toughness of the material, and the solidity secured in the fitting. Another thing is the wheels do not need to be put in the fire to detach them, as is the case in ordinary wheels. (N.B.—Our wheels cannot be injured by being heated and plunged into cold water, which would render other steel wheels perfectly brittle as glass.) Saving in fuel and wages is evident—no skilled labour being required to refit wheels in case of a strained axle. By adopting this system of fitting owners may save hundreds of pounds sterling yearly.



POLLOCK AND POLLOCK,

LONGCLOSE WORKS, NEW TOWN, LEEDS,

POLLOCK'S PATENT BRICK PRESS,

The New "XL" Brick-Making Machines,

THE CHEAPEST AND BEST IN THE MARKET.

Improved Grinding Pans, with patent self-acting delivery.
Vertical and Horizontal Engines.

COLLIERY ENGINEERS.—WINDING ENGINES OF ALL SIZES.

POLLOCK AND MITCHELL'S PATENT KILNS are the Cheapest and Simplest.

London Office—155, Fenchurch Street, E.C.

WIRE ROPES.

JOHN AND EDWIN WRIGHT,

PATENTERS,



ESTABLISHED 1770.

MANUFACTURERS OF EVERY DESCRIPTION OF IMPROVED

Patent Round and Flat Wire Ropes,

From the very best quality of Charcoal and Patent Steel Wire. Galvanised Wire, Ropes for Ships' Rigging, Galvanised Signal and Fencing Strand, Copper Rope, Lightning Conductors, Colliery Ropes and Steam Plough Ropes made from the best Patent Improved Steel Wire.

PATENT ROUND AND FLAT HEMP ROPES,

Hemp, Flax, Engine Yarn, Cotton Waste, Turpaning, Oil Sheets, Brattice Cloth, Wagon Covers, &c., &c.

UNIVERSITY WORKS, MILLWALL, POPLAR, LONDON.
UNIVERSITY WORKS, GARRISON STREET, BIRMINGHAM.
CITY OFFICE, No. 8, LEADENHALL STREET, E.C.

All communications to be forwarded to the BIRMINGHAM ADDRESS.

The "BURLEIGH" ROCK-BORING COMPANY (LIMITED).

100, KING STREET, MANCHESTER.

RICHARD MOTTRAM, Secretary.

For the Sale of the "Burleigh" Rock Boring Machinery; and also for Sinking Shafts, Cutting Tunnels and Levels, and General Rock Blasting Operations by Contract.

References permitted to—

Messrs. BOLCKOW, VAUGHAN, AND CO. (LIMITED), Middlesborough.
" THE DOWLAIS IRON COMPANY (LIMITED), South Wales.
" THE EBBW VALE STEEL IRON, AND COAL COMPANY (LIMITED), South Wales.
" THE CRUMLIN VIADUCT WORKS COMPANY (LIMITED), South Wales.
" T. T. J. WALLER, Esq., Railway Contractor, Gisburn, near Skipton.
" TURNER AND SON, Limestone Quarries, Kiverton Park, near Sheffield.

CATALOGUES AND PRICE LISTS OF MACHINERY FORWARDED ON APPLICATION TO THE COMPANY'S OFFICE.

Original Correspondence.

ARGENTINE MINES.

SIR,—I annex an extract from the Buenos Ayres Standard of April 14 last, which I think will be of interest to you, and which from my own knowledge of the mineral wealth of the Argentine Republic, where I have been resident for many years, contains no exaggeration. There is no doubt that the gold, silver, and lead production of that vast territory would be very great and valuable but for the paucity of resources among miners and mineowners there. Everywhere throughout the Upper Provinces, as they are called, the traveller meets with workings abandoned from this cause, and yet still affording evidence of abundant ore.

Mr. Trendelenburg was cordially welcomed on the Bolsa on his arrival from England. He informs us that a company has been formed in London, paid-up capital £5,000, to work the Carolina Mines, San Luis. These mines have been known for rich gold veins since the last century, and when the Hon. Sackville West, in 1875, visited the locality called San Francisco he casually picked up a few ounces of gold under his horse's hoof, gave it to the manager, Mr. Taaffe, to see if it contained gold, and was surprised at the quantity of precious metal extracted from it. These mines are in the district of Saladillo, eight miles west of the city of San Luis. They gave much gold in the nineteenth century, and numerous mines long abandoned are met with which only require machinery to become productive. Some ten years ago a rich gold mine was cut by Mr. Pineiro, who at once set out for Buenos Ayres to buy machinery; he was murdered on the way. His mines were taken up in February, 1874, by A. Schmidt and Co., of London, who brought out 18000 lbs. worth of machinery, bored 240 ft., and cut rich veins of gold, which they are now working. Messrs. Euler, Lapage, Lallemand, and others have also mines in this district. Mr. Robert Clark is working Cerrillos Mine, a little further north. Father Thomas Parody carried on operations successfully up to 1870, when we believe the influx of water obliged him to desert. As the Rio Quinto Railway brings these mines within 45 hours of the port of Rosario there is every reason to believe Messrs. Trendelenburg and his friends will develop a new and profitable field of gold mining which has hitherto been known only to the mountaineers of Carolina in the remote province of San Luis.

It may be in your recollection that an article copied from the Buenos Ayres Herald, about two years ago, was inserted in the Mining Journal, the paper having been transmitted to you by friends in Edinburgh, and of which I was the writer. I would have communicated with you further on the subject, but from its then apparent hopelessness. I had attempted, in vain, to make arrangements on this side for the sale or working of an argentiferous lead mine in the province of Cordoba, Argentine Republic, but the apathy with which all proposals were regarded led me to believe that Argentine minerals were likely to be estimated in all time coming as too Utopian for home minds.

If you have any interest in this subject I may be able from time to time to put a few notes before your readers. MANIRUS.

Glasgow, June 5.

[We shall be glad to receive further communications from our correspondent.]

CAPE COPPER COMPANY.

SIR,—I have just read with great interest the report of the meeting of the Cape Copper Mining Company, which appeared in last week's Journal. It would add scientific interest to the commercial value of the report if someone would contribute to the Journal a short description of the geological conditions under which the copper deposits worked by the above company are found. Do the deposits occur as beds or veins? If the former, are they regular or irregular deposits, and what are the greatest thicknesses? If the latter, the direction, dip, and width of the principal lode or lodges? What are the chief ores of copper found, and with what earthy and metallic minerals are they associated? What, if it is known, is the age of the stratum in which the deposits are found? Answers to such questions as these would materially add to our stock of scientific knowledge, and help to fill what seems to me a comparative void in our mining literature as compared with that of Germany or America, or even of France. A pamphlet descriptive of these deposits was some years ago published in French, but it now seems unobtainable.

June 3.

F.G.S.

THE NEW SPECULATION—GOLD MINING.

SIR,—I see by your valuable Journal last week, in a letter from "Observer," that Brazil is to be the next country for a rush. This I firmly believe, knowing what I do about gold mining. It appears that the celebrated Don Pedro North del Rey is a topic on the board in London. The monster machinery is completed, and probably the golden treasures will be found soon. Several gold discoveries have been made since the able management of Capt. Vivian, who brought a mine from death's door to the brink of paying dividends. When Capt. Vivian took the administration shares were quoted from 1s. to 2s., since which they have been to a premium, and now the mine is worth to the company 60,000, more than it was before he had the management, and with his ability and zeal no doubt the property will be brought to as great a success as it ever was. The former workers lost the main gold lodes, but, strange to state, Capt. Vivian has been fortunate enough to have found some good slices of them, as the returns will confirm, but there is nothing certain. What lodes are lost he will find; if he does not there is no man in this world who can. When these rich gold lodes are discovered again the persevering and hard-working directors will have what they deserve—a good mine, no doubt; there will be jubilee and rejoicing by the company at large, and with the superior management in London and Brazil the mines will be brought to as great a success as was ever known, and I congratulate the shareholders upon the prosperity awaiting them. Capt. Vivian has had the experience both theoretically and practically; in short, he is one of the best mining engineers in England; he not only superintends the work but puts his shoulder to the wheel to assist its being done, and very few men can be found who have the experience he has had in mineralogy. It is also pleasing to know the mines are being worked very economically, and in conclusion I wish both captain and the company every success.

MINING INVESTOR.

NEW QUEBRADA COMPANY.

SIR,—I am obliged for copy of the report of the recent meeting of shareholders, which, however, does not give to those who were absent an adequate idea of what took place at the meeting. Personally I object to the manner in which my name is introduced into it. For I never made any remark such as that which the Chairman was kind enough to assume I did, for I stated at the time what I now repeat—That I think the remuneration of the directors very small, considering the amount of work they ought to do; and in calling the attention of the shareholders to the items in the accounts of "directors' fees," and "managing director," I wished to show that the accounts were presented in a slovenly and inaccurate manner; that if the managing director's salary is 2000, a year, the other four directors cannot draw 5000, a year without contravening the Articles of Association. If the directors considered the services of the managing director worth 3000, a year, then he ought to have been credited with that sum in the accounts, and the auditors, if they had known anything of their business could not have passed the accounts in their present form.

By a quibble, your Chairman got rid of my statement that you had exceeded your borrowing powers, but it is true nevertheless; and as regards the item, "transport of ore," which absorbs the whole of the proceeds of copper up to Dec. 31 last, no direct answer was given to me, and I did not press for one, as it was evident after the Chairman's statement of the remarkable arrangement now entered into with the Bolivar Railway Company that every penny we can earn up to the end of this year must be paid over to them for "transport of ore," and the written explanation of this charge which the secretary has given is altogether wrong. Not only the accounts, but the statements in the report, require verification, because in view of the modified arrangement with the Bolivar Railway Company you must have known that the estimated profit of 60000, on 19.9 tons ore—which profit is altogether imaginary—does not accrue to this company, but to the Bolivar Railway Company in fulfilment of the new arrangement.

You have talked of being engaged in "delicate and protracted negotiations," in consequence of which you could not meet the shareholder in October last, nor carry out Mr. Darlington's plans, which now that they are published appear to be neither practical nor practicable, and what is the result of seven months' negotiations? The reduction of the quantity to be sent down the line from 20,000 to 10,000 tons during this year, whilst we are still obliged to pay 4s. 5s. railway carriage! If the shareholders who, without the slightest knowledge of the position of the company, shouted so vigorously in your support at the meeting, only knew how near the brink of ruin you have brought this magnificent property, they would speedily change their tone.

ROBERT LORIMER.

R. LORIMER, ESQ.

SIR,—I am instructed to own the receipt of your communication of the 5th inst., and to suggest that if you will take the trouble to call here and inform yourself of the facts, you will not be so ready to commit yourself to statements similar to those contained in your letter above mentioned, the bulk of which may be properly characterised as entirely erroneous.

If you publish your letter in the public prints be good enough to accompany it with this reply.—Walbrook, June 6.

N. G. W. BURCH, Secretary.

THE CHAIRMAN AND DIRECTORS OF THE NEW QUEBRADA COMPANY.

GENTLEMEN,—I thank you for your prompt acknowledgment of my letter of yesterday. It is rather too late now to offer the explanations or the personal interview which I begged you to give some time ago, but which you positively declined. Had I received the desired information then it would have enabled me to satisfy those shareholders who are dissatisfied with the present position of the company, and in whose behalf I am acting. If some of my statements are erroneous, as you allege, all I can say is that they are based on the accounts as submitted to the shareholders on Mr. Darlington's reports and the Chairman's speeches, the only sources of information available to me. ROBERT LORIMER.

Great Winchester-street, June 6.

RICHMOND MINE.

SIR,—I scarcely ever remember a writer contradict himself in the same letter more strikingly than does "Shareholder" in his letter on the Richmond Mine in last week's Journal.

His first paragraph ends thus—
"The mine in this time may have changed to a very great extent for the worse, and the bodies of ore which have been shown to the committee may be greatly diminished without any corresponding additions in the way of discovery, and certainly the rate of exhaustion, coupled with the very unsatisfactory mining reports published weekly, would lead to such a conclusion."

As those declared are at the rate of 30 per cent. per annum on the shares at par, and "if the weekly reports were only half true this ought to be greatly exceeded," it is certainly difficult to understand how such reports can be "very unsatisfactory."

June 2.

ANOTHER SHAREHOLDER.

AN EXAMINATION INTO THE POSITION AND PROSPECTS OF CERTAIN MINES—No. VII.—RICHMOND.

SIR,—In my letter which appeared in the Journal of April 6, on Richmond, I reminded your readers that "the mass of detail which would require sifting on all points of management at home and abroad" was the cause of the delay of the report. The committee's report was in the hands of the shareholders on Thursday, the 30th ult.; it is a most elaborate and well-wrought report, and reflects great credit on the committee for the patience they have shown in a work so trying, and which has been so ably completed, and they deserve the sincere thanks of the shareholders, evincing as the report does the regard they have had for their interests. It would have been handier if so full a report had marginal notes. The first meeting of the committee was held at the company's office on Aug. 25, 1877, when three of its members were resolved into a sub-committee to proceed to America to examine into the working of the mines, and subsequently the services of Mr. Brereton, C.E., and Mr. Powell, were engaged to assist them. Scientific men and experts were also engaged in America. The sub-committee sailed on Sept. 15 last, and all had returned by Jan. 5. En route to the mines some of the principal smelting and refinery works in America were visited, a necessary preparatory duty before visiting them, as none of the party possessed practical acquaintance with the reduction of ores nor the processes of refining. The property is a very extensive one, and even by Americans is styled a "principally domain." It consists of mines, smelting and refinery works, offices and other buildings, wood ranches and water rights. On all these reports have been made, and also on the lawsuit, fuel, bullion sales, accounts, management, and financial position, under the heads named, adding 45 recommendations for future working; 14 maps and plans accompany the report. The main shaft of the mine has been sunk 900 ft., the engine power for same being sufficient for a depth of about 1500 ft. The mine is at present free from water, but as there is a possibility of meeting it in depth, and there being no pumping-gear nor enough room in the shaft to fix it, further sinking may be for a time arrested. Prospecting in portions of the property other than that which is being worked was neglected until the summer of 1877. The discoveries in the adjoining mine—Eureka—have it appears been the only incentives even then. The suggestions for explorations made by Messrs. Price, King, and Rickard were not carried out up to 1875, and attention has been chiefly confined to the ore body of the mine. The theoretical views of Mr. Probert were barriers to explorations in the 200 ft. level, and altogether the mine was calculated by him to "take care of itself." At the beginning of 1877 the mine was literally at a standstill for want of ore and such stuff and trash was supplied to the furnaces, that although five furnaces were running the estimated profits were very small, and so scant had the supply of trash at last become that it was contemplated to cut down the pillars in the mine to keep one furnace going. The company had been restrained from removing ore from Pott's chamber which had been the source of supply, hence the scarcity. Surprise is expressed by the committee that the body of ore in the disputed ground was ever touched, seeing that the ore is so poor, and according to Mr. Probert's own admission the "ore was of no value whatever." There is an eccentricity of judgment and disposition in this which is astonishing. Mr. Probert plunging the company, as the late Chairman expressed it, in "a long and costly litigation for worthless ore." Such conduct is really unpardonable, and deserves the severest censure and penalty a company is capable of inflicting on its servant. We are informed that no proper surveys, plans, and sections existed before the lawsuit. A shipbuilder might as well attempt to construct a ship without a model, or a builder a mansion without the plans, as a miner to work a mine without surveys. It is a humbling thought that life and money has been the cost of such neglect. Thousands of pounds have been lost by inefficient working, and better results must have been attained if the mine had been worked properly. The mine appears to have been impoverished for motives which the committee declines to impute. Of the future of the mine Messrs. Hague and Plummer speak most encouragingly, but all depends on the way in which it is worked. Let us hope that the suggestions will be strictly carried out.

There are in all six furnaces—three of stone, two hydrocycle, and one circular furnace; the latter three are regarded as hobbies of Mr. Probert, and the money expended on them as thrown away. Slovenliness characterised this department. The boilers, four in number, are now in an unsafe state through faulty setting, and it is recommended that they shall be put in a safe condition with as little delay as possible. The stone furnaces have been proved to show better results in every respect to the "hobby" furnaces, and the *modus operandi* of making these latter ones show the larger return has been fully exposed. The discrepancies in smelting are discussed and explained. The loss of valuable flue dust and fuel through excessive blast is commented on, and also the loss made on the ores which have from time to time been purchased. The litharge theory of which the shareholders have heard so much has been shown to be a fallacy. As to the assays of 5 and 6 ozs. of gold to the ton of the company's ore, Mr. Probert must have been "throwing the hatchet." The refinery is an entire failure. The idea was originated by Mr. Probert, who, after securing rights in respect to granting licenses for the Roan patent in the United States, made arrangements with the president of the company for adopting it at a royalty of \$1 per ton of base bullion treated. Up to August, 1877, Mr. Probert received 47500, for royalty, besides 20000, a year paid him in respect of his services as managing director. There is great inconsistency shown in Mr. Probert's conduct in making these arrangements with the patentees whilst in the company's employ. In the late dispute this gentleman has had with the five "bosses" who located a piece of ground adjoining Richmond, he maintains that the "bosses" had no right to locate ground whilst in the company's service, and as they had obtained knowledge and information while working in the mine as to the direction in which the ore body lay that knowledge belonged to the company, and should have been communicated to himself, that he might have taken the ground on behalf of Richmond, Mr. Probert's case and that of "bosses five" are parallel, and it would seem the committee also entertain this opinion. Whether the legal proceedings suggested to be taken against the vice-president is a

wise one or not remains to be seen. Presidents of American mines have given English companies a good deal of trouble, and also put them to great expense, and it is just possible that Mr. Probert, should he turn obstinate in consequence of proceedings being taken against him, and trump up some claim against the company, they might find themselves in a dilemma. Whilst the committee were at the mine certain "informal contracts" were made for charcoal at excessive prices by Mr. Probert. As they were there for the express purpose of considering the state of affairs, especially relating to the extravagant handling of the company's money, the contract could not have been made except in a defiant spirit. The excuse made that his word was his bond with the teamsters respecting the price, which the committee gracefully term "Mr. Probert's morality," is untenable, for we have but to look at the morality of the Roan business and the shifts made to make the "hobbies" and the refinery appear a success—very questionable trickery it is indeed—besides a few other matters, to have a proper estimate of the degree of honour at stake with the contractors. Because he, at a time when in a fix about charcoal supplies, said he would pay 30 cents a bushel for charcoal, whatever the market price was, he was bound to pay it even if it could be obtained for 25 cents, which it can. In the first place, such terms are not in accordance with the views of his employers, and the arrangement seems to be one which emanated from a wilful rather than a reasonable mind. By such contracts, which seem to have been dictated by temper, the company loses thousands a year. But underlying the excuse made there is a system of favoritism which has been exposed, and this to some minds may have other interpretations. Eureka does not appear to be a land of discounts, at all events the shareholders practically are not acquainted with such things.

In a document handed to the committee before leaving the mine Mr. Probert defends the refinery. Erroneous theories and unsound arguments are advanced therein, and the committee have made a few remarks upon the various points raised sufficient to show how much Mr. Probert is in the wrong. The wood ranches, which are about 3600 acres, have not been economically used, and as they were bought with the object of keeping down the price of fuel the committee suggest that they should be nursed, and the wood not cut down as they saw it was being done. The waterworks and ranches are rude in construction, and a system of reckless expenditure has reached even this department. The contract for laying a 4-in. iron pipe to the water springs was estimated to cost \$7000 to \$8000, and has already cost \$10,954. The contractor told the managing director in the hearing of the committee that he could not do the work for the sum agreed on, whereupon he received further instructions to carry out the work, and when it was finished he would see that he should not be a loser. The committee by this time began not to be astonished at what they saw. They could see that hundreds of thousands of pounds lay wasted on the fields of experiment and extravagance, the very gutters drinking in the gold of the shareholders. Gold lost in every direction; gold in the pockets of favourites, while the shareholders have been wondering what could be the matter with so great a concern, patiently waiting the while for the fitful dividends which have fallen into their lap. The committee consider the advice of Mr. Probert in reference to the lawsuit as most unwise, and seriously detrimental to the interests of the Richmond Company. The cost up to October last was 15,924, and will cost still more. There appears to be nothing but one interminable round of lawsuits. At the present time poor "Joe Potts" must be in fear of the law, because the five bosses of whom he is chief "bull-dosed" (whatever that means) the superintendent. The fuel consumed at the Richmond Mine must be enormous. Since operations commenced in 1871 to the shutting down of the furnaces in 1877 it amounted to 400,000, which represents 25 per cent. of the gross value of bullion produced. There is an actual loss of 2s. 11. per share shown in this department alone. It is not likely that the shareholders can submit to this sort of management much longer. The loss on the fuel, hobbies, refinery, and other things cannot be less than 250,000—a sum larger than has been received in dividends up to the present time. It is now suggested to send a cargo of English coke to the mines by way of an experiment. The committee show that there will be a considerable saving if coke is sent from England. The average consumption of charcoal and coke combined in American smelting and refinery works is from 15 to 18 per cent. of the weight of ores reduced. The consumption at Richmond during the past six years has been fully 32½ per cent., so that there has been 80 per cent. more fuel consumed than there ought to have been. It is strange that enquiry has not been made before into the working of the mine.

In your contemporary for October and November, 1875, a correspondent suggested that a commission of enquiry should be sent out, but there was no response save the breathings of certain lawyers. As a natural sequel, the books on the mine are indifferently kept. No books to show receipt of stores, no "order book," no "contract book," no book for "dead work" entries, no "letter book." It is very clear that the accounts are pretty well jumbled together. The "general expenses account," a sort of American "petty cash book," sums up to the noble figures 57,033, 11s. 1d. I have failed to notice any reference to the 20,000, which had to be written off the reserve in 1876, in consequence of an over estimation of stores the year before. That error was quite large enough to have called for summary dealings. Business men at a glance ought to have seen that things were being conducted in a most reprehensible manner, but the matter was dismissed with a few lines. It is really surprising the indifference shareholders show in matters of this sort. I cannot agree with the committee when they say "that it is very easy to be wise after the event," in reference to Richmond affairs. The shareholders, as I stated before, were warned in 1875 of the state of things, and after that by a shareholder at one of the meetings in 1876. And any shareholder who had closely watched the reports from the mine would have been convinced that everything was not going as it should have done. With the information the directors had it is surprising that action was not taken earlier.

The recommendation of the committee that an agent should be sent out annually to examine the general state of affairs at Eureka applies equally to all other foreign mining companies. The position which an agent of a foreign mine holds is one surrounded with many difficulties and temptations of a trying nature, and unless he is a man of undoubted ability and integrity the chances are that a company would suffer severely by him. The power of the directors is really thrown into the hands of one man, and if we at home are watchful and critical of directors how much more so should we be of an agent whose judgment may not be sound, and whose mind may be narrowed with prejudices which shut out common sense, and whose business capacities when put to the test are worse than profitless. In the mine under consideration the recommendations of Mr. Probert were from a relative, and much is made of this in the report. I am under the impression that the present Chairman of Richmond is related to the late Chairman, and this may account for his not endorsing the committee's report in full. I would suggest that at the next meeting the shareholders should call upon their Chairman and the directors to resign in one body; there are several of them who have rendered good service to the company, but let all resign, and let the shareholders choose whom they will. I have no doubt that those who have proved themselves worthy the position would be re-elected. My object in making this suggestion is that there may be a board untrammelled by any influence or consideration from within and from without, and also one that will not have sympathies with the past order of things. If a new start is to be made let it be a real one. With new management at the mine as recommended, and new control at home, the future of Richmond cannot fail to be a brilliant one. I have only been able to touch upon the many points of interest in the report. In conclusion, I would urge the shareholders to support the committee in the recommendations made, and insist on all being carried out.

Much excitement has been caused this week by the shares advancing to 11½, as the next dividend, it is said, will be larger than the last. In the face of the committee's suggestion to create a reserve fund—a real one with money invested in Consols—of 50,000,

and also a working capital of a like amount, I do not think it wise to increase the dividend. Let us hope that the directors are not working in opposition to the recommendations made by the shareholders' committee. The amount of cash and bullion now in hand is estimated to be about 100,000l.

8, Drapers' Gardens, London, June 5.

WILLIAM GABBOTT,
Stock and Share Dealer.

ROCK-DRILLS—THE PROPOSED COMPETITION.

SIR,—In answer to your various correspondents on the above subject in last week's Journal, we would suggest that the proprietors of the Roanhead and Eclipse drills should arrange for an exhaustive trial between their respective drills because, judging from the way Mr. Elliott writes of the Ingersoll, it is clear the Eclipse cannot need to run against the Ingersoll to prove its superiority, and, further, it will give greater renown to the Roanhead to compete with the Eclipse than with the Ingersoll. For ourselves, we have decided that it is not necessary to run the Ingersoll in competitive trials to establish its position. We would here remark that no one accepted our challenge as we put it, all wishing to have the trial so arranged that the defects of their machines and the good qualities of ours should not be made apparent in the course of the trial.

London, June 6.

LE GROS, MAYNE, LEAVER, AND CO.

PRACTICAL MINING—PARABOLIC LODES.

SIR,—We are told that the ancients were excellent miners, and that, considering the very imperfect nature of the appliances at their disposal, the amount of work which they got through was truly astonishing, but with regard to scientific mining their knowledge was excessively limited, and hence it is that many of the most valuable lodes were overlooked, although they could readily have been wrought, even without the assistance of modern machinery. The exertions of the late Cornish savans—Wern Fox and Mr. Jory Henwood—in connection with the application of science to mining are well known; Mr. Jory Henwood rendered especial service in ascertaining the nature of mineral deposits, and thus enabling miners to carry on their operations with the utmost possible chances of success.

Now, from the various volumes and papers which the gentlemen mentioned have given to the world, it has been very generally considered that lodes frequently followed a direct line; that is to say, that if a lode were worked upon in one sett and found to bear north and south, it was quite safe to assume that the direction was permanent, and that the same lode would be found on the same line, perhaps half-a-mile distant. In practice, however, disappointment has sometimes resulted from the direction of the lode occasionally varying. I do not, of course, refer to counter lodes, but to variations in the direction of the main lode itself. These disappointments will, however, no longer be heard of, for the admirable map of the Blaenau and D'Eresby district recently drawn by Capt. John Roberts entirely clears up the matter. The curve which the lode takes in D'Eresby Consols in connecting D'Eresby Mountain with Frith Aberllyn is almost an exact parabola, and inasmuch as a suspended rope by an ordinary law of nature falls into a catenary curve when supported at the two ends only, why should not lodes assume the parabolic form likewise? It may even be found hereafter that the hyperbolic curve is not an inconvenient one for bringing a lode into the required position, and if a rope deposits itself in a curve surely a lode might be permitted to do so. This is only sound science. The metal when deposited is undoubtedly more elastic than a rope, hence the curve would be somewhat sharper. This parabolic lode theory opens an entirely new field for discussion and research, and although I am aware that it is a principle of the Journal to exclude mathematical formulae and questions necessitating the delineation of the conic sections, much could be done toward elucidating the theory mentioned without resorting to either.

June 3.

F. G. S.

BOSCASWELL DOWNS.

SIR,—Will you kindly insert the few following lines in correction of the report of this case which appeared in last week's Journal, which was incomplete, inasmuch as the reporters left the Court before the solicitor's case (held apart from that of the directors) was adjudicated upon, and therefore they merely reported the *ex parte* statements of the liquidator, who of course did his best to make out a case.

The Vice-Warden, in dismissing the solicitor's case, also with costs, said he wished to withdraw any observations he might have made casting an imputation upon any of the defendants, as, had they been allowed to reply, instead of the case being stopped by him, their answer would very possibly have altogether altered the complexion of the matter. This, coupled with the discharge of the order nisi, with costs against the liquidator, speaks for itself. A. MILSTED.

London, June 5.

DEVON GREAT CONSOLS.

SIR,—I was pleased to find that the shareholders in Devon Great Consols at their late meeting sanctioned the resolution of the directors to return to the old calendar month mode of payment. To yield to the will of the men would be most unwise and pusillanimous. It appears that a subsequent meeting of the men was held on the mine when the decision of the company was declared to them, and when the men, or some one or more of them as representatives of the rest, signified their determination not to work in the mine except on the five-weeks system of payment. Now, it remains to be seen who is the strongest party, for doubtless one of them must go to the wall. For the directors to yield would furnish a very bad precedent in our mining districts. It would be such a triumph for the men as would make them saucy, and at some future day they would probably strike for more wages, or for something else, under a conviction that having succeeded in this case they could have their way in another. What is to be done? The engines are at work, and there is a certain amount of current cost, which is unavoidable unless the mine is to be abandoned, which, however, need not be. I would say to the directors on no account yield to the men, do not throw the reigns of government into the hands of a set of self-willed and unreasonable, not to say wicked men, who are bringing their wives and families to want and begging, when they ought to be working. This in the West of England is an abnormal state of things, and charity bestowed on such men is misdirected. Laziness should not be encouraged by contributions from Tavistock and other districts. The men have not any fair grounds for asking for help, because their poverty is wilful, not accidental or providential. The directors it appears do not intend by the return to the calendar month to diminish the pay of the men.

If the directors are resolved, as I hope they are, never to yield to the men in this question, let them give notice that men are wanted at the mine, and surely now that so many mines are idle, and men consequently plentiful, the places of those who have left the mine could soon be filled up. If terrorism is applied by the deserters, as was done in the North, to prevent those who are willing to work on the directors' terms from doing so, the law should be enforced on those who exercise it.

"If a man will not work neither should he eat" said the great Apostle, and those persons who patronise idleness by contributing funds to support the men in their resistance to the fair wish of the directors are injudicious, if not something worse. If injury were designed against the men the case would be different. If any of the men during the fifth week, which occurs four times a year, want some advance on account of wages, no doubt they might have it, as was formerly the case in all mines in Cornwall and Devon, by subsist. Directors, have patience for a short time, and men will come, but do not yield! Excuse the unsolicited advice of a disinterested man, who is no enemy to the poor or rich, but wishes well to all.

June 4.

R. SYMONS.

P.S.—What a curse the strikes have brought upon the country. They have wrought great evils on all classes; and, therefore, benefit to none. A few years ago coal was raised in price from 1s. to more than 2s. per hundred, which brought distress on the poor by limiting the use of that necessary item. Strikes did succeed for a time in enabling the men to obtain high wages, which the masters could

not afford to pay, and which resulted in the bankruptcy of many. The men not only got more wages but worked less hours for it—a state of things which has resulted in the introduction of foreign goods on a large scale, because the Americans and others could undersell the British producers. The masters were coerced, so to speak, to comply with the men's demands, but the men's families are said to have derived no benefit from the circumstance, because the men spent the extra gains at public-houses. It was only a temporary triumph, for most of the strikers after bringing suffering on themselves and families had to submit to reduced wages. They are all the worse for strikes, and the labourers in Devon Great Consols will find that their conduct will result in loss to themselves even more than to any other class. The Devon Consols Company can well afford to wait for men; it is well for them to do so.

R. S.

DEVON CONSOLS—CO-OPERATIVE STORES.

SIR,—I quite agree with the valuable suggestions made by "A Looker-on" and "A Miner's Friend" respecting the principles of the co-operative store system being introduced not only in Devon, but at the several mining districts throughout Cornwall, by which the miners and their families would be able to obtain their various provisions some 25 to 30 per cent. cheaper, and no doubt better articles, than they now get at the various shops. This is a matter which should be seriously thought of by not only the employed but by the employers. I do not mean in any shape or way to countenance for one moment the Truck system—nothing at all of the sort. There are plenty of ways our leading mining companies could render good service, one of which might be, as your able correspondent "A Miner's Friend" suggested in last week's Journal, by lending a lump sum of money to make a start by way of capital on hand to go to market with, and pay cash for all goods. The amount could easily be refunded to the company with interest by quarterly instalments. Perhaps there is no mine so well situated as Devon Great Consols so far as railway and shipping is concerned, and why a helping hand has not yet been given to those employed here in the way indicated is not creditable to the local management I consider. Instead of the Devon Great Consols men going manfully to work they are sticking out against their better feelings, and from all I can gather, even amongst the miners and others, it is more the officials and monthly men who are urging and encouraging the miners to stick out against the directors' and shareholders' most just and reasonable terms of 52 weeks' work for 52 weeks' pay and by 12 monthly payments.

Wherever the black sheep may be from the highest or lowest in the district officially or otherwise the London directors should take note of all that is going on, and get rid of them. I could mention names which would I feel sure arouse the London directors and shareholders to action. They are well known, however, around here, and are doing all they can to spread dissent, instead of being the first to bring round a revival and settlement. The local press gather their daily information from the same source, which to say the least is a tissue of falsehoods, and written only to create a misdirected sympathy to obtain subscriptions to foster a most nefarious cause; for, as Mr. Symons, of Truro (who has perhaps seen more of Devon and Cornish men and mines than any one person in the two counties), pointed out a week ago in your Journal that—

It is downright folly and wickedness. It is not wicked for the father of a family to refuse work when he can have it, and by that refusal bring his family to the border of starvation. The men should not assume to dictate to the directors; the servant should not be above his master.

If there are, as is asserted, traitors to be found in the local camp, the sooner they are expelled the better for all. There is a very true and old saying, "Murder will out" sooner or later. The miners (no, I will not say the miner—those who are sticking out) may rest assured from all I have been told the London directors will not give way, and allow those employed to become masters. The cotton mill owners in Lancashire might just as well give up at once all the mills to them, and allow them to become masters, and dictate terms. Strikes have always done great injury; never have and never will succeed, but as has been justly remarked any disputes between employer and employed should in every business and trade be settled mutually between themselves. Foreign element introduced is nearly always productive of mischief unless both sides are equally considered honestly and fairly. The London directors of the Devon Great Consols are to be commended for the wise, honest, and just mode of 12 monthly payments; and seeing the present fearful low price of copper ores, with such a serious monthly loss by now selling it, I certainly think that if the men consented to-morrow to the directors' terms, what is the utility of setting all hands, or even half the number, to work at such a ruinous loss. The shareholders, as was pointed out at the half-yearly meeting last week, are very different now to the days of prosperity—10, 15, and 20 years ago—when such wonderful dividends were paid. Things have since then changed wonderfully indeed; copper ores then 6l. 10s. to 7l. per ton, and now 2l. to 2l. 5s. per ton, is enough to make one shudder for Cornish and Devon mining for the future outlook.

With all due respect, but at the same time to speak plainly, the present shareholders will not any longer tolerate or be guided by even the resident director or agents, or anybody else, in the long-continued enormous expenditure of something like 40,000l. to 45,000l. a year at these mines, as against sales of copper ores, amounting at the rate of some 20,000l. a year. It must not be allowed, and I feel perfectly sure the shareholders will unanimously support the London directors in the retrenchment they have so ably commenced. In doing this no doubt they are sure to tread on somebody's corns, but whilst doing this they can have no personal feeling in doing injury or injustice to any person. It is an absolute necessity in these fearfully depressed times in order to keep the mine going, and hope for better times.

In conclusion, I would desire to point out that there are many present shareholders who bought shares at high prices for dividends, but have got only a taste of the past good times, and who will not—and, indeed, I am told cannot—pay calls; it, therefore, behoves the London directors who have to look to the financial arrangements to endeavour to make both ends meet, and I sincerely commend them for their present anxieties and forethought.

PRO BONO PUBLICO.

CO-OPERATIVE STORES FOR MINES.

SIR,—Although the system of co-operation has worked very well in Lancashire, and would, no doubt, do so at Devon Great Consols, where the number of hands employed is large, I do not exactly understand how it would work at mines where (say) not more than a hundred or so are engaged. Of course every miner would like to get the best goods for the least money, and if it would add, as stated in last week's Journal, between 2s. and 3s. per week to each miner's income all would be glad to adopt it, but the difficulty seems to be to get the capital to start with. I suppose a store for a mine with 100 men could not be started with less than 200l. capital, for it seems to me that no advantage would result from buying of the wholesale merchants in Cornwall, seeing that these are themselves no more than what a Lancashire man would call petty traders. No, the supplies must be got from London or Liverpool direct, so far as groceries and such like are concerned; boots must be had from Northampton; drapery from Manchester; and all that. Now, where is the money to come from? It would be quite useless to expect a contribution of 2l. per man when the men have only just enough to meet current wants, and to throw the men into the hands of the Cornish miners instead of leaving them in the hands of the shopkeepers, as they are now, would only be turning them out of the frying-pan into the fire.

I read the suggestion that the adventurers should be asked for a loan of the necessary capital at 5 per cent. interest, but do not think it worth much, as most of the adventurers have enough to do to meet calls, but I think some of them, individually, could be found ready to lend the money at the interest named, or at least to arrange with some of the leading wholesale houses in London to give the usual trade credit to the stores. I would mention Joseph Travers and Sons, of Cannon-street, for groceries; Morley's, of Wood-street, for hosiery; Cook and Sons, of St. Paul's Churchyard, for

drapery; or the Fore-street Warehouse Company, and such like firms as those with whom the co-operative stores should do business; and whoever undertakes the organisation of the stores should be careful to get a list of London wholesale firms and write to them. It might also be well to get a good manager by employing some intelligent head shopman at one of the large stores at Exeter, Plymouth, or Truro, as he would know the method of buying to advantage, and would be free from local influences, the assistants could readily be obtained in the neighbourhood of the mine. So far as Devon Great Consols is concerned the directors would, no doubt, lend their aid in getting the store aloft, and I suppose it will not be long before the system will become general in both counties, for I can say from experience in Lancashire that the high quality and low prices which we become accustomed to at co-operative stores soon make both men and women disgusted with small shopkeepers' arrangements, especially as all is ready-money trade and there is no losses to pay for.

Tavistock, June 3.

THEATR.

WHEAL PEEVOR.

SIR,—Is there any mistake as regards Capt. A. James's alleged promise to give a champagne dinner in the event of Wheal Peavor giving a dividend with tin under 40l. per ton? I should like to be informed by some correspondent, because I should not be satisfied to conclude that Capt. James—a man of recognised integrity and veracity—would be "worse than his word." If he did make such a promise, of course he will fulfil it some time, which I hope will be soon, that I may have the pleasure of meeting the agents to talk over the "battles of life." It is pleasing to see how well Captain James is conducting affairs at South Frances. He is a very good mine manager, although he slightly erred in judgment with respect to Peavor, and he can make a sensible speech at a mine meeting, which is more than every agent can do.

Redruth, June 4.

ADVENTURER.

WHEAL GRENVILLE, AND ITS MANAGEMENT.

SIR,—In December last you did me the honour to insert a few remarks of mine upon the above company. I then asked if it were not time to have the affairs and prospects of the mine thoroughly investigated. From observations which were made at the general meeting held a few days after my letter was written, it was evident my remarks were somewhat unpalatable to certain parties connected with the management of the mine, and if any other person then doubted the soundness of my views, or the advisability of adopting my suggestion, I think he must now share my opinion after perusing the balance-sheet of the mine just sent to the shareholders. At the general meeting held March 21 last (vide *Mining Journal*, March 23) we were given a lengthy account of what had been done under the present management in the matter of new erections of machinery. The way the great expenditure had been carried out was warmly extolled, and we were told in the most confident manner that the immediate result would be, with a very little extra outlay, a return of 30 tons of tin per month, and the gentleman who held this opinion told us also he believed that at the following meeting the mine would show a clear balance-sheet.

The result of all this is that the largest tin sale for the past three months was 19 tons, and the balance-sheet shows a loss on the quarter of 1100l. It appears to me that so far from the returns of tin increasing, they are materially falling off in proportion to the extra amount of stamping power employed. Formerly there were 48 stamps only on the mine, and the tin returned from these was 15, 16, and 17 tons of tin per month. The number of stamps has, I believe, been increased to 64, or one-third more, and the highest return of tin for one month has been 19 tons. This may probably be capable of explanation, but if the executive consider it a satisfactory result of the enormous outlay the shareholders have been induced to sanction, I must say I cannot agree with them. That expenditure has frequently been adversely commented upon by correspondents in the Journal. There was probably a little feeling on the part of some of the writers, but I have heard thoroughly practical men whose judgment is reliable, and whose disinterestedness no one can question, wholly condemn the outlay advised by the present management. It was through having heard such views expressed that induced me to write you in December last, and I would again suggest that some practical and independent person engaged to investigate the mine, and let us know what its prospects really are, and what is the probability of a profitable return to the shareholders for the enormous amount of money they have been persuaded to expend upon the mine during the past two years.—June 4.

VRBE, SAP.

[For remainder of Original Correspondence, see to-day's Journal.]

CARCLAZE TIN AND CHINA-CLAY PIT.

The following paper by Mr. R. SYMONS, of Truro, was read at the half-yearly meeting of the members of the Royal Institution of Cornwall, on Friday May 31, at Truro:—

Having made a survey and map of this ancient and far-famed pit for this society I am desirous of submitting therewith a brief physical description of it, and a few associated circumstances. The name, according to Dr. Bannister in his "Glossary of Cornish Names," means grey rock or castle. In Mr. C. S. Gilbert's "History of Cornwall," the name is written Creglaze, evidently in error, for it is not so written elsewhere. Carclaze is a large open excavation lately called Carclaze Mine, and previously Carclaze Stream Work. It was for ages called Parnell's Stream Work, because worked for several generations by a family of that name. It is situated in the manor of Treverbyn, in the parish of St. Austell, and is the property in fee of Messrs. Gill and Ivimey, of London. It stands about two miles north-east of the town of St. Austell. The surface of the ground at the margin of the pit is said to be 685 ft. above high water at Charlestown, from which it is two miles distant. It is surrounded by a large amount of waste land, some of which is now being enclosed. About half a mile eastward is a cairn called Carn grey rock, noticed in the Ordnance Map. The panoramic views from the commanding position of Carclaze are extensive, picturesque, and interesting. The circumference of the pit I found to be very nearly one mile; its depth at the mouth of the tramway tunnel is 132 ft., the extreme lineal measure, longitudinally, in the centre is 27 chains, or about three-eighths of a mile, the area at the top is 13 a. 1 r. 37 p., of was so in July, 1877. It has been supposed to be more extensive than that, for Mr. C. S. Gilbert, who wrote his history about 60 years ago, says that "it is 10 acres wide at the surface"—i.e. (he meant) 10 acres area. I visited the pit for the first time in 1850, many years later than when Gilbert wrote, and when it was not half its present size, so that his estimate was erroneous. At that time it could not have been more than 5 acres in extent.

I very much question the remote antiquity ascribed to this pit, for if it has been so considerably enlarged in 48 years I cannot suppose that several hundreds of years were taken to execute the portion existing at that date. It has been alleged that works for tin have been carried on here continuously for 500 or 600 years! If that be so, very few hands must have been employed the greater portion of that period. Mr. Gilbert calls it a stream-work, but not, I think, with strict propriety, because the tinstone taken out of the veins would have required reduction previous to dressing for the smelting-house, and for that purpose eight stamping mills—four on the northern and four on the southern side of the pit—were erected, and were at work in 1830, whereas stream tin in general does not require such treatment. Previous to the erection of those mills the tinstone was reduced by steam-power in the pit; the house which contained the engine was removed only a few years ago, or the remains of it.

"When Mr. Davies Gilbert's 'History of Cornwall' was published it was found to contain more numerous orthographical errors than any book I ever saw. A gentleman late of Truro deceased, asked him how so many errors were permitted to pass through the Press? Mr. Gilbert replied, 'When the work was in the hands of the printer I was abroad, and the gentleman who undertook to examine the proof sheets did not fulfil his engagement.' In preparing the new edition of the 'History of Cornwall' I find that very great attention has been devoted to the accuracy of spelling the names of places in pursuance of instructions from the department. In the existing Ordnance map of the county, published about 65 years ago, there are many errors in the names, hence the instructions. A few years ago a lady asked me how long an acre was? It may be long enough to extend round the globe.

At the time of its erection the mine was rich in the bottom, several fathoms below the present level, and sanguine hopes were entertained of permanent richness. At the commencement of the work, and long afterwards, the tinstone was carried in carts or on horses or mules down the hill to stamping-mills at the bottom, but after the first tunnel was made from the foot of the hill, about 110 years ago, it was used as a canal for the transit of the stone in flat-bottomed boats to the mills, thus superseding the carts, &c. Gilbert says that 60 of those boats were chained together. I think, however, the number was six, not sixty, from the fact that only six were found there when the tunnel, which had collapsed, was reopened by the present occupiers. The length of the tunnel is $\frac{1}{2}$ mile. A tin-smelting house was anciently erected close by the mills in the valley for the smelting of the produce, and probably tin ore from other places. It was called a blowing-house, because a bellows, worked by a water-wheel, supplied the blast to the fire, which was made of wood. The smelting-house at Charlestown may be said to have taken the place of that which no longer exists in connection with these works. The tinstone is found in numerous small veins passing through the rock, which is decomposed granite, sometimes called by Cornish miners "growan." These veins or lodes vary in thickness from 2 in. to 2 ft., but are uncertain in their continuance, size, and direction, but the strike is in general easterly, like that prevailing in the Cornish tin mines; some are perpendicular, and the others of various angles of inclination.

At the present time, owing to the very unremunerative price of tin, very little is being done in Carclaze for raising it. Until about the year 1854 all the clay and gravel in which the tin was embedded were carried by the water down the valley to Par, where there is an immense accumulation of them; but since an edit or tunnel was constructed from Pembroke Mine to Crinnis Beach, just above high-water level, all the washings in the valley, including those from Wheal Eliza and other mines near, flow through that edit into the English Channel, whence they cannot return to affect Par Harbour. The present lessees, seeing that the china-clay was thus running to waste, about 24 years ago bought up the interest of the late tenant, and since then they have worked for both clay and tin, but now it is worked almost exclusively for clay, and that on a tolerably large scale. In the year 1877 about 5000 tons of china clay were exported; of tin in the same year about $\frac{1}{2}$ tons only were sold. In former times as much as 10 tons of tin per annum were produced, that is by the present occupier. I presume that while the smelting house was in use the returns were very much beyond that quantity—probably 10 tons per month. The works in the valley, near the southern end of the tunnel—the clay-pits, drying houses, sheds, stamping mills, &c., occupy a large area—probably 15 acres. About 60 persons are employed in the works, and about 1000 per month expended.

The late Dr. Boase said that "Carclaze Tin Mine is one of the greatest curiosities in Cornwall. This mine is worked open to the day," according to the miners' term—that is, like a quarry. It is of considerable depth, and its superfluity exceeds several acres in extent. It is excavated entirely in white granite, and when the sun shines the reflection of light is so exceedingly dazzling as to be almost insupportable. The tin ore occurs here intermixed with shail and quartz, in the form of irregular veins, which traverse the granite in every direction, and so abundant that the whole rock requires to be pounded and washed to complete an entire separation of the ore. A band of hard schistoseous rock is at C on the plan, on a part of which the debris or "overburthen" has been recently placed, thus filling up a portion of the pit which is valueless. One of the labourers informed me that he thought the tin in the entire mass does not exceed 3 lbs. to the ton. The pit is wholly in granite, but the junction of the clay-slate is on the edge of the pit, as marked in the plan. Carclaze is the largest pit in Cornwall, except, perhaps, Delabole Slate Quarry, which has been at work also from time immemorial. The largest quarry in Great Britain is said to be Penrhyn Slate Quarry, in Wales. A tunnel was cut many years ago for conveying the clay in suspension from the pit to the works in the valley, where it precipitates, and is afterwards dried by artificial heat in buildings called "dries." These dries are of recent introduction. Previously the clay producers had to wait for natural evaporation, which in winter was generally very slow, and even in summer too slow for the present demand. The clay produced from Carclaze is of inferior quality, fetching only 15s. per ton, whereas the best quality clays realise 25s. per ton at the present time.

Messrs. John Livering and Son, St. Austell, are the present workers. They took a fresh lease for 21 years on Jan. 1, 1878, having previously occupied for a like term. The dues or royalty on the clay is 3s. 6d. per ton, and that on the tin is about 1-15th, both excessively high. Poor rate, or dues, 8d. per ton. How far the clay will hold in depth at Carclaze is not yet known, but if we may take the Beam Mine as a specimen it will hold down to a great depth, for at Beam it was found to fill up the space between two lodes to the 150. With regard to the arrear of land which it underlies, it is said to be considerable, but there is a piece, at D in the plan, which consists of hard rock, and, consequently, useless to the workers in clay. There is no china-stone raised in the sett. The tramway in the tunnel extends to the northern part of the pit, to which the excavating and washing operations are now confined, the southern and western parts having been abandoned because of the poor quality of the clay there.

There are in all four drifts at Carclaze—the railway and clay tunnels aforesaid, and two others (shallow ones) for conveying the water to the pit for washing and driving the stamping mills; the level not admitting its introduction at the top of the pit. The water comes from the vicinity of Hensbarrow, and is divided into two streams at a short distance from the pit. For two or three months in the summer nearly all the works are suspended from want of water. The ponds shown on the plan were formed to store the water drainage of the common, but only one of them (called Carclaze pool) is now in use. The earliest operations were at A. at present they are at B, for clay only. The pit called Little Carclaze was sunk by the present lessees, and abandoned about eight years ago. I am not aware that the area of Carclaze was ever ascertained till now. The excavation is being extended continually, and six times more rapidly than at any ancient period. By a remeasurement at any future time, and compared with the present area—13a. 1r. 37p.—the increase of the pit will be apparent. China-clay, called by the Chinese kaolin, is decomposed felspar, one of the constituents of granite, the other constituents being quartz and mica. The mica is marketable also, because it contains a small portion of clay, but the price is very low. The clay after being broken in the mass, is separated from the mica and quartz by a running stream, a man or men being in constant attendance to stir the clay, that as much as possible may be carried down in suspension through the tunnel to the depositing pits in the valley. Many of the clay merchants are said to have made fortunes by their work, and this fact (for it is a fact) induced so many persons to enter into clay works that the stocks in the market are redundant, and the prices thereby so reduced that very few of the works are now self-sustaining, and in some of them considerable losses have been incurred. It is a remarkable fact that all our staple mineral productions are simultaneously depressed in value—copper, tin, lead, and clay—a coincidence I never knew to have occurred before. The chief china-clay producing parishes are St. Austell, St. Mewan, Roche, St. Dennis, St. Enoder, and St. Stephens. There is also clay in Breage, Germoe, Towednick, Gwennap, and Bislard.

As to the uses to which china-clay is applied, I cannot do better than quote a paragraph from a lecture delivered by Mr. J. H. Collins before the Society of Arts, London, in 1876. He said—"The first use to which china-clay was applied was the manufacture of porcelain, and this is still popularly supposed to be its sole use. This, however, is by no means the case; probably little more than one-third of the clay now produced is so applied. Large quantities are used by teachers for filling up the pores of calicoes as a dressing, and still larger quantities are used by paper-makers to give body and weight to their paper, especially printing papers. The manu-

facture of alum, sulphate of alumina, and ultramarine uses up very large quantities annually. Small quantities are used by photographers, manufacturing chemists, and colour makers for a great variety of purposes, and, if reports are to be believed, it has been used in the adulteration of flour, artificial manures, soap, and grease. Should the present low prices be maintained its use will, no doubt, be still more largely extended in directions as yet unsuspected." With regard to the adulteration of flour by the admixture of china-clay, I am reminded of the passage in the New Testament where the question is asked—"What man is there of you, whom, if his son ask bread, will give him a stone?" (Matt. vii., 9). This it would seem some flour merchants have done, and, I fear, are now doing for the public consumers. When I was staying in London in the spring of 1866 it was stated that flint reduced to a fine powder was found in butter!

As we have the means of detecting by chemical analysis every species of adulteration, it is to be regretted that chemical science is not more generally utilised for that purpose. We have a good county analyst in Mr. Collins, but of what service can the appointment be if his talents are not requisitioned? He was appointed by the county authorities, and he should be employed and paid by the same for the public good in checking the employment of those ingredients which are impositions on purchasers, and in some cases prejudicial to health.

Meetings of Public Companies.

MWYNDY IRON ORE COMPANY.

A special general meeting of shareholders was held at the offices of the company, Queen-street-place, on Tuesday.

Mr. ALEXANDER BROGDEN, M.P., in the chair.

Mr. A. THOMSON (the secretary) read the notices convening the meeting.

The CHAIRMAN said he had to explain to some extent the nature of this extraordinary meeting; it had not been usual to hold a meeting in the middle of the year, but the question with the company was a very simple one, and he thought when he had given the reasons the shareholders would see that the directors were justified in calling the meeting to pass the resolution of which notice had been given. In the first place he need not explain that the trade and commerce of the country during the past six months had undergone a period of suspense and anxiety, partly owing to political affairs, and partly owing to the depression which has existed all over the world. However, he was happy to say that, notwithstanding the bad trade, they were not working at a loss, and they had the mines in as good a condition, if not superior to their state at any previous time; but they had the necessities of finance upon them in this way. As the shareholders were aware they had made a large outlay on the Llynvi and Treacastle properties, and they had drawn for that outlay very much upon the dividend-paying reserves of the company, and very little upon its capital. Unfortunately at the last meeting it was necessary to make a call for the purpose of providing the necessary funds to enable the company to tide over the time when the Llynvi Company—whose bills they had to take up—would be able to pay them again. They had also had to carry on the expenditure at the Treacastle property, as the directors considered that it would be unwise to delay the period of bringing that mine into active and profitable operation; and, in addition to that, in consequence of the diminished consumption from the old part of the mine the stocks of ore had accumulated. They had been obliged to go on taking out ore, or the mine would close in the old parts, and have to be opened up at considerable cost afterwards. The matter had necessitated the company obtaining a mortgage from the bank for 50,000*l.*, which would fall due in July next, and they were obliged to take early steps to provide for it. Further money had been found by the managers, and the directors considered they must provide money to clear off that liability. There was also the necessity of considering that the present state of trade might continue for some little time, which would oblige the company to increase the "force," and carry on the mine without much profit. This was, of course, embarrassing and distressing, but there was no reason for any very great anxiety if the shareholders would support the board in carrying out the project which they had considered it to be wise to adopt to get over all these questions. The Articles of Association limited the borrowing powers of the company to 10,000*l.* These borrowing powers gave those who provided the funds a first charge upon everything the company possessed, not only the freehold part of the property, but the chattel part of the property, and seeing that they had purchased a valuable mine at Llynvi, and had made a valuable mine at Treacastle, the directors considered that to increase the borrowing powers of the company from 10,000*l.* to 25,000*l.* was by no means a disproportionate amount to have, and it was probably the best and most satisfactory way in which the directors could recover the position of the company. They had a large amount of uncollected capital; the old Mywindy Mine Freehold and the Treacastle property turning out to be a better mine than the directors had ever stated it would be, and they had a considerable amount of other property in farming stock, horses, railway wagons, and other chattel property, which formed a very ample security for the 25,000*l.* which they proposed to increase the borrowing powers. He had no doubt that the shareholders would adopt the view of the directors in regard to this matter, as it would be the means of putting the company on as sound a footing as ever, and as likely to prove as successful in the future as it had been in the past. From the Treacastle property they were now raising about 150 tons of magnificent ore a week, which would find a very ready sale, and was of a character which would command a higher price in the market than the ore which had previously been raised. The level had been driven right under the second shaft, and this second shaft had only 3 fathoms to be sunk to communicate the shaft with the level, which will enable them to increase their raisings very considerably. They had gone through 12 fathoms of first-class ore and 4 fathoms of mixed ground, turning out a large quantity of ore. At that particular place they had a depth of 42 feet, and there was every prospect, he was glad to say, that the level when driven further would still be in good ore ground. This was a condition of things such as they had never had before, because they had scarcely dared to expect such a good result. Since the last meeting they had put down the engine, got the pumps fixed, and they were in working condition in every sense. They had this cross-cut in ore, and by bore-holes they had proved the length of the vein in its longitudinal direction for 600 yards in length, so that that gave them a very fine level prospect for the future. They had been able to reduce the wages since the last meeting to the extent of 10 per cent., and economies were being carried out in every way. Of course, they had the bad trade existing, and how long it would continue was more than anyone could venture to predict. With respect to the Llynvi Company, that was now being carried on by a liquidator. This company was supplying him with considerable quantities of ore, which he was paying for in cash, and a scheme was on foot to reconstruct the company and place it in a position to be carried on fully again. The reason why the directors asked the shareholders to subscribe for 15,000*l.* of debentures—to which amount they would limit themselves—was that they wanted to call up the last 15*l.* per share of the capital of the company. It was always found that some small proportion of uncollected capital was extremely desirable, as it gave confidence to the people with whom the company dealt, and thereby contributed to the financial strength of the company. To carry out the necessary financial arrangements it was quite clear that they must find money by some means or other, and the directors desired to do it by the means best for the interests of the company. During the past eleven years the company had made 118,000*l.* of profits, which was over 10,000*l.* a year for the whole time, and these had not been all good years. The mines were now in excellent condition, and they had practically finished their outlay, so that he thought the directors had a right to call on the shareholders to subscribe for the debentures, to enable the company to be as prosperous in the future as it had been in the past. Some of the shareholders might say that they would be able to raise the money from financial people, but experience had shown that public confidence had been shaken and destroyed in all kinds of industrial investments, and they would rather leave their money at the bankers at 1 or 1½ per cent., or invest it in Consols or Government securities. The directors had the utmost confidence in the future of the company, and he would, therefore, move "That Article 5 of the Articles of Association shall be amended so as to increase the borrowing powers of the company from 10,000*l.* to 25,000*l.* and the words 'twenty-five thousand pounds' for the words 'ten thousand pounds' in the fourth line of that article."

Mr. FRY seconded the motion, remarking that the board had perfect confidence in the soundness of their undertaking. With regard to the Treacastle property, on which they had laid out 17,000*l.*, he believed they had a property equal in every respect to what Mywindy was at the outset. They had a body of ore, they believed, almost limitless extent, judging from the borings, which ought to give a profit even at the low prices at present ruling, because they had proved by analysis that the ore was of a very good quality for steel-making purposes.

Mr. RETOLLE believed the company never stood in a better position than now. Of course, trade could not be controlled. He thoroughly believed that in the Treacastle property they had a better mine than Mywindy had ever been, and it was now in a position to be worked at a very moderate cost. The mine had cost the company 17,000*l.*, but in ordinary times they could not have purchased such a property for 50,000*l.* They had made no loss whatever in the last six months; indeed, they had made a small profit, which was a very cheering circumstance. The latest reports from the mine stated that there was a further small demand for the ore from such companies as the Down and Ebbw Vale, and the ore was worth at least 2s. 8d. per ton more than the other ores. He believed that in this property they had a good investment for many years to come.

Mr. HOWARD said since he had been connected with the company the average dividend had only been about 4½ per cent., and though he had every confidence in the board it seemed to him that the better plan would be to get rid of the property, and he proposed as an amendment that the company should be wound up.

Mr. GRIFFIN seconded the amendment.

Mr. FRY said it would be the height of folly to wind up at the present time. There could be no doubt that when the mine was first floated the price paid was a great deal too high, but it was a good thing now.

A SHAREHOLDER thought they had better make a call than borrow at 7 per cent.

Mr. RICHARD TAYLOR said it appeared to him in calculating the value of the property by a comparison of what had been received on the whole capital for the whole time was not a proper mode of treating the question. In the present company the interest had amounted to an average of 7½ per cent. The capabilities of the mines were shown by the fact that they had made no loss during the past six months, notwithstanding the state of the iron trade. He thought it was quite clear that with the iron market in its ordinary state the property would give a good return, and that the original capital was no doubt excessive. But it should be remembered that they had expended 17,000*l.* of profits on the Treacastle property, by which they had secured a very valuable addition to the Mywindy Mine. He believed they had now in Treacastle a property from which they would get a very large produce of ore of first-class quality, which even in the present state of the market commands some notice from the very best houses in the South Wales district, and a property from which they would be able, even at the present time, to raise sufficient ore to keep the mine quite self-supporting, as it was at the present time. He believed the time would come when mines producing good hematite ores would pay very well indeed. If they determined to wind up, who would buy an iron mine at the present time? And if they allowed the water to get into it they would lose everything, because the machinery would sell for a mere nothing while there was so much mining machinery on the market, and it appeared to him that to give up now would involve the greatest possible disaster, and he strongly recommended them to raise the money required to carry on the mine on the most prudent scale.

The CHAIRMAN contended that it would be disastrous, unwise, and inconsiderate to wind up. The gentleman who recommended that course unfortunately came into the mine in its earliest days, and paid too much for his shares, but when he (the Chairman) came into the company it was in a much worse condition than at the present time, and if he sold out now he would do so at a handsome profit. This proved that the price of shares had nothing to do with the actual value of the property. Since he had been in the company it had made 118,000*l.*, and that on the average market value of the shares gave a return of 12½ per cent. per annum for the whole time. He believed the company would pay the same rate in the future, and it would be most unwise to throw it away now. As to making a call, if they did so they would have all their capital paid, and by issuing debentures they would probably be able to pay them back out of profits, and thus it would only be a temporary operation, and they would still have the uncollected capital remaining. The directors only intended to raise 15,000*l.*, although powers were asked for 25,000*l.*

Mr. HOWE having withdrawn his amendment, the motion proposed by the Chairman was carried unanimously.

In reply to a question it was stated that the cost of raising the ore was about 7s. per ton, and the latest sales had been at 10s. per ton.

The meeting closed with a vote of thanks to the Chairman and directors.

DON PEDRO NORTH DEL REY MINING COMPANY.

The sixteenth ordinary general meeting of shareholders was held at the Cannon-street Hotel on Friday, May 31.

General D. DOWNING in the chair.

Mr. J. E. DAWSON (the managing director) read the notice calling the meeting.

The CHAIRMAN said—Gentlemen, I am sorry I have to fill the chair on this occasion. I wish our Chairman, Mr. S. Lloyd Foster, had been present, but his state of health would not admit of it, and he has been obliged to go to Carlsbad. I do not know that there is anything of any consequence, or any remarks which I can make to you, which would add at all to this report, which strikes me as being completely exhaustive and clear; but any remarks on any question which any gentleman may wish to put will be answered to the best of my ability. I think also, to save time, I will call upon the managing director, who will make some remarks which will elucidate affairs more to your satisfaction. I will now motion the report and statement of accounts presented at this meeting be received and adopted.

Col. T. M. WELLER: I beg to second that.

Mr. J. E. DAWSON (the managing director) said that, in the absence of Mr. Lloyd Foster, he had been deputed to make a few remarks upon the present occasion, and he would ask the indulgence of the meeting whilst he endeavoured to draw attention to the chief points of interest in the report. The principal accounts—the mine accounts—did not arrive here till May 15. Nevertheless, they were made up, audited, printed, and sent out by May 28, together with the directors' remarks. They thought they would speak for themselves. The directors had endeavoured to come to hand and been circulated. There was a question for one moment whether the meeting should be postponed until the receipt of Capt. Vivian's report; but as under those circumstances it would have been necessary to hold a *pro forma* meeting, to comply with the Articles, it was thought it would be better to at once hold the general meeting. As soon as Capt. Vivian's remarks came to hand they were printed and circulated. Turning to the balance-sheet, and taking that as a starting-point, Mr. Dawson said the directors had endeavoured, in compliance with the request of the shareholders, to furnish the accounts more in detail, and he would say that they would speak for themselves. The directors had endeavoured to show things fairly in the account, and any doubtful matters they had endeavoured to keep on the safe side. Had the retail store account, one of the documents mentioned in the notice of the meeting as not having been received, come to hand earlier the directors might have taken credit in the accounts for some 600*l.* They naturally imagined, judging by past years, that there would be a profit; but, of course, they had no means of arriving at anything like the amount, and, therefore, did not put anything in. He mentioned that to show that the board had not strained the position. Then, again, to provide for contingencies, with respect to those retail stores, instead of taking credit for the whole of the profit which had been made in former years the directors kept a sum of 500*l.* standing to a suspense account to meet any loss which might occur. He might explain the item put down for materials, timber, &c., represented as on previous occasions merely the value of the unissued stock. All stores were written off to revenue as they were issued; this had been done for 12 years. As regards the important pumping machinery which had just commenced to work, a great portion of that had already been charged to cost—in fact, all the labour and timber, and nearly 250*l.* of the cost of transit up the country, had been already charged to revenue. The results for the year, as explained in the directors' report, showed a gold return of 51,869*l.*, which was a trifle better than last year, and the total cost had been 28,395*l.* 5s. 2d., which was a little more than last year, but the increased expenditure was more than accounted for, by the amount expended on labour and materials, provisions, proven, and live stock. As Capt. Vivian naturally explained, with regard to the cost of labour and materials, more work had been done; and although the board did not wish to make any point of the question of provisions, it might be as well to remark that there was a difference of nearly 100 per cent. in the cost of the staple commodities with respect to provisions, but that was a serious item. There had been a large reduction of timber necessary for carrying on such an important work, and it might be interesting to mention that the value of timber drawn from the company's own estates was estimated at 2400*l.*, and was obtained at a cost of about 1000*l.*, so they had effected there a saving of 1400*l.* It was only fair to explain that the credit of that was entirely due to Capt. Vivian; he had bought the timber as they did before Capt. Vivian took charge, they would have paid 1400*l.* more this year for timber than they had paid, which was a very satisfactory point. (Hear, hear.)

Mr. HILL: How long have we been in possession of the wood?—Mr. DAWSON: Ever since the Machine property was purchased.

Mr. HILL: The same sort of charge has appeared in former accounts; there is no saving in 1½ year over the previous half year.—Mr. DAWSON: I am dealing now with the year 1877. The same sort of thing went on in the previous half year, but in former years we did not draw our own timber from our own woods. We had the means, but it was never availed of. There was an item—"Commission (Rio), bank drafts for working expenses, and general agency in Rio." At the last meeting some shareholders took exception to that amount, and he might mention, with respect to that, that a new arrangement had recently been completed for the Rio, and that the company's agency in Rio. He did not wish to speak of too long terms regarding that arrangement, but he believed it would effect a considerable saving. One other point he might mention—their telegraph code had been slightly improved, whereby the directors would be able to receive particulars of the produce at the lower cost. He might mention also that, owing to Capt. Vivian's foresight, the directors had been enabled to receive particulars by telegraph of the erection and completion of the permanent pumping machinery at a very slight expense. The net loss for the year, as shown in the accounts, was 4994*l.* 1s. 8d., but as he had stated it would be about 6000*l.* less had they been charged in the Rio, that net loss subject, but at the same time one of the directors should not shrink. At the end of 1876 they had a balance of 8102*l.*, and at the end of 1877 they had a balance of 8416*l.* If the shareholders would bear in mind that when they commenced the permanent pumping machinery they thought they were going to have an immediate call, and probably a large one, and yet at the end of 1877 no call had been made, but that the permanent pumping machinery was really completed, he thought the position was satisfactory, and reflected very great credit upon Capt. Vivian for the energetic way in which he had explored the mine and kept up the produce. (Hear, hear.) Although this was a very satisfactory position, the directors could scarcely be carrying out their duty if they did not point out that unless there was an improved produce almost immediately the balance now in hand would very soon be exhausted. This must be patent to shareholders who looked at the figures.

Mr. HILL: Is it not quite possible that it is already exhausted?—Mr. DAWSON: No. Looking at things at the worst, we shall have used about 2000*l.* out of 2400*l.*, so there is a risk of having to make a call, otherwise we might get pinched in our finances, and have our credit suffer, which would be a very serious thing. We have always had good credit, and I hope we always shall. I am expressing the sentiments of the board when I say that a strong effort should be made to get the call will be made unless it is absolutely necessary. Col. Weller is a holder of 1200 shares, and I do not think he wants to pay any calls. I advance that as evidence that no call will be made unnecessarily.

Mr. HILL: You have power to call up 4s. per share.—Mr. DAWSON: Yes; but 1s. per share would give us 5000*l.* The next point was the permanent pumping machinery, which had been alluded to in the director's report.

Col. WELLER: Allow me to remark that the 1200 shares which I hold have not been purchased upon the depreciated price of the shares lately, but have been held from the formation of the company without parting with a single share. (Hear, hear.) Mr. DAWSON went on to say that Capt. Vivian, in his report, explained the reason for the delay in the erection of the permanent pumping machinery. Capt. Vivian had unquestionably had great difficulties to contend against, and he believed that the reasons which Capt. Vivian assigned were perfectly correct. With respect to this permanent pumping machinery there was one point to remember—that Mr. Gordon, who had the reputation of being an authority upon mining, and had seen this company's property, and had examined it, stated that the proprietors would not do their duty to the property if they did not force their way down and sink the mine further, that it could be done at a moderate cost, and that a strong effort should be made to do it. Since Mr. Gordon expressed that opinion the permanent pumping

* Some persons have questioned the existence of these boats, asserting that they were nothing more than "frames." I believe the historian, and think that they were really boats or barges.

machinery had been erected, and whatever the result might be the shareholders would have the satisfaction of knowing that justice had been done to the mine, because the lodes would have been tested. With regard to the supply of mineral and exploration, one or two words were necessary upon that point. Capt. Vivian appeared to have explored the accessible parts of the mine so far successfully, seeing that various bodies of ore had been found above the water level, which given a large amount of mineral. He did not want shareholders to go away with the impression that these were new lodes, because such an impression was likely to mislead. His impression was that a large proportion of the mineral which Capt. Vivian had found (and the finding of which reflected great credit upon him) had been left behind in former years, when they had stuff which they knew was very much richer, and, therefore, the mining captains in charge of the property naturally took 6d. and rejected the 1d.

Mr. HILL: Were they pillars?—Mr. DAWSON said they were rather more than pillars; they were large bodies of lodes. He did not wish to detract from Capt. Vivian in making that remark, because when Capt. Vivian went there three or four mining captains who had been in the mine for years were at their wit's end to find an ounce of paying ore, so that whatever might be said, whether it was old or new, all credit was due to Capt. Vivian. The mineral had not only paid for working, but covered all the fixed charges, so that the loss shown by the accounts was actually less, according to Capt. Vivian's statement, than was expended upon the permanent pumping machinery and the necessary works. In No. 8 new shaft, to which Capt. Vivian attached considerable importance, Capt. Vivian appeared to think they had a distinct lode, which nobody had ever seen before. In the last annual report reference was made to a discovery in the 25 ft. level, in No. 8 shaft, and he would say two or three words upon that point. Capt. Vivian said it was likely to prove of importance, but in December, 1876, it was suspended for want of force, and during the whole of 1877 it had not been worked upon, and, therefore, the directors thought the natural conclusion was that Capt. Vivian did not now attach much importance to it. With respect to the lodes in the bottom of the mine, and which was an important thing, they now had the machinery, and they must test the lodes in the bottom of the mine. Capt. Vivian had repeatedly expressed the most confident opinion on that subject. Looking over the reports from time to time one would say that Capt. Vivian was almost too sanguine. Be that as it might, Capt. Vivian certainly expressed a confident opinion about the lodes which he had been able to work in the bottom of the mine, of which the directors made extracts under date July 10. That date was chosen because it was the last date Capt. Vivian was able to work in depth, and if Capt. Vivian's opinion on July 10 was good, it was good to-day; there was no question about Capt. Vivian's opinion. In the report which had been received since the making up of the report, Capt. Vivian said—"I may add that nothing has occurred to alter my opinion of the value of the property." With respect to the produce for April and May, it must be admitted that the returns for April, of 3050 oits., and for the first division of May of 800 oits., were very disappointing, but until the details relating to those periods arrived it was impossible to form any opinion. He expected it was owing to some causes of a temporary nature which would be satisfactorily explained or explained in a telegram. There was only one other point to which he would refer. Now that the permanent pumping machinery was erected, the question naturally uppermost in the minds of shareholders was when would they reap any benefit from the outlay? (Hear, hear.) There was no information upon that subject in Capt. Vivian's report, and, therefore, it might be interesting to the meeting if he explained by drawings the present position of the permanent pumping machinery. [Mr. Dawson then explained, by reference to a section of the mine, the position of the permanent pumping machinery and the workings.]

Mr. HILL thought Mr. Dawson had very frankly and ably explained the position of affairs. It was a well-known fact that the lodes in the bottom of the mine were uncertain in its character, and they must bear in mind that in continuing the working of this mine they were engaged in a grand experiment, and nothing more.

Mr. S. J. WILDE thought it was reasonable to suppose that at the end of a few months, when they reached the bottom of the mine and began to work these lodes, they would be able to pay expenses, and make some profit besides. (Hear, hear.) Of course, if a call were absolutely necessary it must be made, but as this would increase the capital upon which a dividend would have to be paid, he suggested that if money were wanted for a time 10000 should be borrowed from the bankers. He thought it would be advisable that if the board were strengthened.

The CHAIRMAN said the directors would bear the suggestion in mind, and probably fill up the vacancy.—The report was then unanimously adopted. Col. T. M. Weller was then reappointed a director.—The auditors (Messrs. Quilter, Ball, and Co.) were re-elected. The CHAIRMAN said he thought that the falling off in produce might be caused by many of the men having been taken off productive work to assist in the erection of the new pumping machinery.

On the motion of Mr. HILL, a vote of thanks was passed to the board, and the meeting broke up.

FULLER'S REEF GOLD MINING COMPANY.

An extraordinary general meeting of shareholders was held at the offices of the company, Lombard-street, on Tuesday,

Mr. WITHERBY in the chair.

Mr. J. BROOKE-BOOTH (the secretary) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen, you are probably aware that this meeting is only an extraordinary one, and not the annual meeting of the company, which takes place in the month of October. The notice convening the meeting (which has just been read by the secretary) is purposely put in rather vague language, because if we had announced any resolution to be proposed to-day we should have to hold another meeting to confirm that resolution, and we wished to avoid that, as it is very difficult as it is to get a quorum for one meeting, and we thought there would be no chance whatever of getting a quorum for another meeting. I shall have to finish with a resolution, but I will meanwhile just tell you what has taken place since we last met, so that you may know the exact state of the case. You will remember that at our last meeting, in December, I stated that we had come quite to the end of our funds, and that in consequence thereof the works at the mine had come almost to an end, as the manager would not or could not go on without further remittances from this side. Since that time matters have remained almost in statu quo at the mine. There has been a little work going on, and the manager has seen one or two places containing apparently good gold, but from all he can gather he has been unable to get out any great quantity of quartz, for the reason that I have stated before—the want of money for men and materials. We have several times in this room discussed the position and behaviour of Messrs. Weston and Co., the agents in Sydney, and in consequence of what was said at the meeting in October, by one or two shareholders, those gentlemen have since formally resigned, and expressed their readiness to hand over the position of agents and the books and papers to anyone appointed by the directors in their place. Upon this the directors deliberated, and we decided as a temporary matter to appoint Mr. Cornish, the manager at the mine, as our agent in the colony, and we requested him to carry on the works as well as he could for the present, and we also asked Messrs. Weston and Co. to hand over the books, papers, and documents belonging to the mine. Then a new difficulty arose, for we learn by a telegram that Messrs. Weston and Co. refuse to hand over the documents, &c., until they receive the sum of 20000, which you will remember they drew upon us, and which we have dishonoured, having no funds at the time. This is now the state of things: we have heard only a few words by telegram, and we do not know what Weston and Co. may do, or if they will do anything. But we think it would be very desirable to pay Weston and Co. this 20000. If possible, because it would place the mine under new hands, and some small improvement may be hoped for in consequence, and also because if the company were wound up we should first have to pay this 20000. In any case. Besides that we also want 10000 or 20000 to go on with in the hope of an improvement turning up in the mine. I should have mentioned that in appointing Mr. Cornish as manager we offered him a percentage of 10 per cent. on all the gold sold from the mine—not the gold raised but the gold actually sold—and we hoped that this might act as an incentive to him to do his utmost to get some more stuff out, and so pay his way. At all events we want 50000 or 60000 at once, and we have decided that it is hopeless to try to raise this sum unless we offer better terms than we have previously done. The debentures issued last year were 5 per cent. ones, issued at the price of 75, and the purpose of this meeting is to ask you to authorise us to raise the interest on all future debentures issued from 5 to 10 per cent., still to be at the price of 75. This is the object of this meeting, and the general discussion of the state of the company if any discussion should arise, but we could not put that in the notice for the reason that I have explained before. We have some hopes—but I confess that they are very faint—that with this increase of interest we may be able to raise 50000, or 60000, to enable us to go on a little longer, and later on with the increase of general confidence which may be expected perhaps we may be enabled to raise altogether the 20000, at which we are aiming, and have aimed, which would, as I have said on several occasions, put us in the position of being able to send out a competent man from this side, from whom we might learn where there is any chance of being got out of the mine, or whether it would be better to give up working it altogether, abandon it, and wind up the company. I may mention, however, as I have done on several occasions, as an inducement to any of you who may be inclined to come forward with some more money than there is every probability that in the event of the company being wound-up the mine would sell for more than enough to pay all the debenture holders, and something over; so that if you take 10 per cent. debentures at the price of 75, you not only have over 13 per cent. for your money, but you get back a bonus of one-fourth when the debentures are redeemed at par, instead of 75. That is certainly a consideration, that the mine would sell for at least enough to pay the debentures. There is another ray of hope which the directors have in view, and it is this—they can raise some 20000, to enable them to pay off the rent and some other claims connected with this room, they will appoint as secretary a gentleman to whom they have been introduced, who appears to have very influential connections with capitalists and others, and who is confident of being able to raise sufficient funds to enable us to work the mine vigorously, and see what it is really worth. We should have done this months since, but we have not had any funds to enable us to leave this office, and to arrange with our present secretary, who is willing and desirous to be relieved from his work, and to enable us to obtain the services of the gentleman I have referred to. I do hope that the shareholders will feel disposed to come forward with this small sum of 20000, or 30000, now that we are about to offer them more inducement to subscribe. I do not think I have anything more to say on that point, but before I sit down I should just like to mention that our secretary yesterday put into my hands a very voluminous document—a sort of Parliamentary yellow book (not a Blue book) which you see here, and which is the report of the committee of investigation of the Richmond Consolidated Mining Company, and he drew my attention to the remarkable coincidence between the history of that company and that of our own company. The Richmond Consolidated Company was in much the same position as we were. There were agents on the spot and a manager at the mine. The shareholders continued to send out money just as we have done, and they never got any return—the cry was still "Give give give"—but no profits were ever shown—I use the word "shown" advisedly, because profits were made, but the shareholders did not get a sight of them. Their shares were quoted at about one-half or one-third of their par price; but last year, I think it was, the shareholders woke up all of a sudden, and they appointed a committee of investigation. That committee of investigation sent two or three of their number out to the mine, and they have made a clean sweep—that is what we want to do. They obtained more funds, and worked the concern vigour-

ously, and the consequence of this is that the last dividend was 15 per cent., and the shares (50s. paid) are now at about 90s., or nearly double the par price. You see by this that the fearful loss which would have happened to the shareholders has turned into a very happy profit. I do not say for a moment that the circumstances are all the same in the two companies. There is one that certainly is not, for all the officials connected with that mine—the directors, secretary, manager, and a host of others—were extremely well paid for five or six years. I am quite sure no shareholder here will say that anyone connected with this mine in London has been extremely well paid since the company has been in existence. But I see no reason why the same thing should not happen with our concern; at all events, it is worth making the attempt. We fully believe there is plenty of gold there, and that all we want is honesty at the mine and a little more money—30000, altogether—to enable us to satisfy ourselves, and get the best possible advice that we can. We ask the shareholders to take courage once more, and to give us the funds to send out a regular mining captain from this side, upon whom we can depend for a true report of the state of the mine. I shall be very glad if any gentleman will give us some advice upon the subject, and I shall be very thankful for any remarks that may be made on the subject. I have now only to move "That the interest on the debentures of the company, which at the meeting of April 18, 1877, was fixed at 5 per cent., be and is hereby raised to 10 per cent. per annum, at the same price of 75."

Mr. HICKEY, in seconding the motion, quoted the case of a silver mine which had been abandoned, but which was purchased by a man who knew the neighbourhood where the mine was situated, and who for 20 tons of ore realised 30,000000, with an average to the value of 200000.

In reply to a remark, the CHAIRMAN said they had repeatedly had 2 ozs. of gold to the ton of ore, and with that the concern ought to pay.

Mr. GREENWOOD said the real difficulty of the shareholders was to get a really independent report on the property.

The CHAIRMAN said that was the very reason that they wanted the money. Some of the shareholders would probably be blaming the directors for what had happened in connection with Mr. Joseph, and for not having done years ago when they had funds what they now wished to do. The reason was that Mr. Joseph was a director, and having to go to Sydney on his own affairs he offered to go and make a full investigation of the concern, and to report fully upon it. However, Mr. Joseph had failed to do so, and had given hardly any reason why he had not done what he had promised to do.

Mr. HICKEY said there was no doubt that the money sent out to work the mine had been squandered in a most unexampled manner. The Sydney committee expended nearly 300000 in the first three months.

In reply to a question, the CHAIRMAN said the debentures at present taken up amounted to 112000 nominal, or 84000 in cash.

Some conversation took place as to whether the increase of interest should apply to the debentures already issued, and it was ultimately decided that the resolution should stand thus:—"That the interest on the debentures of the company already issued, or about to be issued, which at the meeting of April 18, 1877, was fixed at 5 per cent., be and is hereby raised to 10 per cent. per annum, at the same price of 75."

With this alteration the resolution was passed unanimously, and the proceedings closed with the usual compliment to the Chairman and directors.

LEADHILLS SILVER-LEAD MINING AND SMELTING COMPANY.

The second ordinary general meeting of the shareholders was held at the company's office, St. Helen's-place, on Thursday,

Mr. PETER WATSON in the chair.

The notice calling the meeting was read by Mr. F. R. WILSON, the secretary.

The CHAIRMAN said it afforded him the greatest pleasure to preside at the meeting, which was the third half-yearly meeting of the shareholders, as the last meeting, which was held in September, was what might be termed the annual meeting, at which the statement was presented, as the shareholders would remember, showing in detail the financial position of the company. This being the half-yearly or bi-annual meeting no balance-sheet was presented, but a report had been issued, which, no doubt, the shareholders had all read. The shareholders were perfectly aware of the great depression in the metal trade, especially which had existed not only in this country but in other countries. Before proceeding to dilate upon the position of the mine, he would remind them of the fact that since they last met here they had suffered from a depression in the price of lead of something like 10s. 6d. to 12s. 6d. per ton—that was the fact when they last met here, and now it was 15s. 6d. to 20s. per ton, and now it was about 18s. 10s., so that there was a fall of no less than 30s. per ton. And he was sorry to say that not only had they had a fall in the lead market, but also in the copper market. They had had copper much lower than it had been for the best part of half a century; they had had Chili copper at as low a price as 59s. 10s., which showed a fall of something like 50s. per ton. In the same way tin, at the time of the last meeting, was selling at 70s. per ton, and it had now fallen to something like 60s. to 61s. per ton, a fall in price of something like 10s. per ton. He trusted, however, that the Congress which had been called would result in some favourable and definite arrangement being come to, and that shortly there would be a revival of trade, not only in this country but in all parts of the world. So far as they had gone, he thought they might foresee what was likely to happen in the metal trade. For instance, an increase in the price of iron was generally regarded as the precursor of prosperity in this country; but from what had been told him by his excellent friend and colleague Mr. York, who came from Wolverhampton, it seemed that in this instance copper would take the lead of other metals, and he thought this idea was borne out by the fact that not so long ago a Congress, than Chili copper rose from 59s. per ton to something like 65s. per ton, the present price; and he was happy to say that from the information he had had regarding the metal market there was some little improvement in that also; there was a little blue sky to be seen, and he hoped they had seen the worst, and that when they met six months hence they would be able to congratulate each other on a better price for lead. (Cheers.) He also hoped that tin would follow and advance in price, as indeed it was doing. Not only had there been a depression in the price of the base metals but also in the price of silver. It would be seen by advertisements in the daily papers that some of the large firms were offering silver spoons, forks, &c., at 40s., 45s., and 50s. less than the price they formerly sold at, and it was really a fact that silver had been called upon to be sold at a price of 40s. per ounce, and he was glad to say that the directors paid an interim dividend of 3s. per share in April, and all depended upon what was obtained for the stock of lead which they had in hand and might continue to raise between this and the next meeting. In the midst of all this depression there was one source of satisfaction to the directors—that notwithstanding this state of things they were vigorously prosecuting the various developments of the underground operations, in sinking shafts, and driving various levels with the hope and belief—and he might say the full knowledge—that they would make very important discoveries in the mine, and he believed he might say that some of these important discoveries would be made off during the next six months of work. With regard to the various operations being driven by full force of men, the CHAIRMAN said that the various operations were being driven by full force of men. At the same time the directors believed that when the communication was made, which would be in the course of a few months, they would be able to make some important discoveries at that portion of the mine. There seemed to be a general feeling amongst those who had resided at Leadhills for a long period that something good was in store for the shareholders. Also at Brown's vein and other portions the mine was looking very promising indeed. A letter had been received during the past few days which confirmed all that he had been saying—that the mine was looking really very promising indeed for making discoveries. They would see by Capt. Watson's report that the various operations were being driven by full force of men. With regard to the introduction of boring machinery the directors to-day had had it under consideration; no final decision had been arrived at on the point, but if a favourable arrangement could be made a boring machine would soon be at work, which would double or three times the work which could be done by hand labour. (Cheers.)

A SHAREHOLDER: Would it be a hand machine?—The CHAIRMAN said it was not a hand machine. They had tried a hand machine, but unfortunately it was not adapted for this mine. The dressing-floors had been enlarged. A section of the directors, with the secretary and manager, had recently visited the mine, and had made an arrangement which would effect a considerable saving on the dressing-floors, and they had just heard that that arrangement had been carried into effect. The smelting works also had been considerably improved, and the stack or chimneys would be carried something like 22 or 23 ft. higher than it had been, which would finish the works. Various improvements had been made, all of which were simply provided for out of the returns of the mine now being made. Since June 30 the directors had sold something like 22,00000 worth of lead, and lead ores to the amount of about 600000, making a total of 28,00000 worth. It was right to mention that they had close upon 800000 worth of cash and bullion in hand, and something like between 600000 and 700000 worth of lead and lead ore in hand, making about 14,00000 after the sale of 28,00000 worth of lead and lead ore.

A SHAREHOLDER: Are you selling lead ore now?

The CHAIRMAN replied they were not selling just at present, and did not intend until they got a better price. There was another point he might mention. The directors invited a gentleman to go over the gold regions, who reported very favourably indeed upon the subject. Since then another practical man gone over the ground, and confirmed the previous opinion; and it was his opinion and the opinion of the board that some trials should be made to see if something could not be done to obtain returns from the gold regions, not only in this mine, but in connection with other mines. Satisfactory arrangements had been made with regard to the labour question, and everything seemed to be going on harmoniously with the men. Mr. Nevin, the manager (whose respected father had been manager at the mine for some years before him), some time ago applied for leave of absence on account of ill-health, which was granted for three months; and Mr. Nevin went to Africa. He recently returned, and the doctor had advised him to take a long sea voyage. Mr. Nevin had, therefore, sent in his resignation, which the directors with great regret had been reluctantly compelled to accept for a time. However, it was satisfactory to know that there were some good men at the mine, who would be able to well look after the interests of the company.

The SECRETARY added that it would be seen that there was an important improvement in Brown's vein, at Gripp's.

The CHAIRMAN, in answer to Mr. Don, said the smelting works had been improved considerably lately, and the lengthening of the stack would eventually be the means of effecting a considerable saving to the company.

The SECRETARY, in answer to Mr. Taylor, said the number of hands on the mine was about 270.

The CHAIRMAN then formally moved the adoption of the report, which was seconded by Mr. TUFFELL SOUTHGATE and carried.

On the motion of the CHAIRMAN, seconded by Mr. TAYLOR, Mr. R. Wilson was re-elected a director.—On the motion of Mr. TAYLOR a cordial vote of thanks was passed to the Chairman and directors, and the meeting then broke up.

DOLCOATH MINING COMPANY.

A three-monthly meeting of shareholders was held at the mine, on Monday, Sir F. M. WILLIAMS, Bart., M.P., in the chair. The accounts showed the labour cost for three months to amount to 8032.15s. 4d.; merchants' bills, 3737.19s. 4d.; vice-wardens' assessment, 311.19s.; making a total of 11,802.13s. 8d. On the credit side there was for 372 tons of tin ore sold, 13,471.18s. 5d.; by arsenic, 704.18s. 3d.; total, 13,542.16s. 8d., which, after deducting 677.2s. 10d. due to Mr. G. L. Bassett, and paying 11.16s. 2d. for carriage of tin, made a total of 12,877.10s. This left profit on the three months' working of 1074.16s. 4d., and after paying a dividend of 5s. per share, a balance of 164.4s. 6d. was left in hand. The following is the agent's report:

The engine-shaft is sunk 11½ fms. under the 338; the lode is worth for the length of shaft (12 ft.) 800. per fathom. The winze under the 338, west of engine-shaft, is worth for 9 ft. long 700. per fathom; the water having been partially drained, we have resumed the sinking of this winze. The winze under the 338, east of engine-shaft, is worth for 9 ft. long 550. per fathom. The 338, east of engine-shaft, is worth 250. per fathom; this end is about 3 fms. short of new east shaft. The 338, west of engine-shaft is driven nearly as far west as old sump shaft; the lode is worth 300. per fathom. New east shaft is sunk 2½ fms. under the 338; the lode is worth for 9 ft. long 400. per fathom. Old sump shaft is sunk 4 fms. under the 338; the bottom of the shaft is of but little value, but we think it probable that another part of the lode is standing to the south, which we are now searching for at the 324. The 324, east of new east, is producing a little tin. The 324, west of old sump, is worth 200. per fathom. The 314, west of old sump, is unproductive. The 302, east of new east, is producing a little tin. The 290, west of old sump, is not of much value. The 254, west of old sump, is worth 120. per fathom. The 215, west of Harriett's, is holed to the winze under the 64; the lode in the end is worth 100. per fathom. A Harriett's shaft we are cutting the pit at the 275, and are preparing to sink the shaft below that level. The 275, west of old sump, is worth 150. per fathom. The 254, west of old sump, is worth 150. per fathom. The 254, west of old sump, has been holed to the winze under the 243, and the ground is to stop; the lode in the end is worth 100. per fathom. Stray Park shaft is sunk 3 fms. below the 230; the lode is worth for the length of the shaft (12 ft.) 120. per fathom.—South Lode: The 280, east of cross-cut, is worth 250. per fathom. We have just intersected this lode at the 278, but have not yet cut it out, so that we cannot report its size or value.

The CHAIRMAN said the committee had met once since their last account, at which Col. Beaumont was present, and expressed a desire to have his boring machine tested in one of the levels of the mine, at a charge of 340. per fathom. It was, however, resolved that the question should be postponed until some future time. Col. Beaumont was on a visit to the county, and whilst staying with him (the Chairman) at Gooonvrea, he requested to be put to the mine with a view to seeing if he could be allowed to try his boring machine in one of the levels of the mine. He attended, but his terms were too high, and they could not see their way clear in the present depressed state of mining to give it a trial on the terms he proposed. Before leaving the colonel said he was quite prepared to modify his terms if he could be allowed to give the machine a trial. He (the Chairman) thought, taking into consideration the times and the present position of the mine, that the time had hardly arrived when they could give it a trial, although, as far as his private views were concerned, he would like to see it in the mine. He would, however, not like it to be thought that he in any way wished to throw cold water over the Barrow drill, and he hoped to see it tried very soon in the mine. In Mr. Loam's, their engineer, they had every confidence, and he believed as a mining engineer he stood second to none in the county. Still he had the curiosity to get an account of Col. Beaumont's machine, and he found that for that machine ending July 14, 1877, the ground driven at Carn Brea in the four weeks ending 12½ fms.; Aug. 11, 15 fms. 4 ft.; Sept. 8, 14 fms. 5 ft. 6 in.; Oct. 5, 12 fms. 1 ft.; Nov. 3, 14 fms. 1 ft.; Dec. 1, 14 fms. 2 ft.; and Dec. 29, 8 fms. 1 ft.; making a total of 92 fms. 3 ft. 6 in. In 1878, four weeks ending Jan. 28, 8 fms. 3 ft. 6 in.; Feb. 23, 20 fms. 4 ft.; March 23, 14 fms. 2 ft. 6 in.; April 20 (new level), 2 fms. 2 ft.; and the same date another new level 2 fms. 2 ft. 6 in., at an average cost of 340. per fathom. He hoped and felt fully convinced that the machine they were about to try (the Barrow drill) would be worked with the same beneficial results as it had in other mines.

In answer to Capt. A. JAMES, Capt. JOSIAH THOMAS said the last price of manual labour was 250. per fathom. Col. Beaumont wanted 340. per fathom, and the mine to supply the air. They told him they could not think of entertaining such a position, which would entail a loss of about 100. per fathom. He mentioned that the secretary (Mr. Provis) of the Mining Institute of Cornwall had invited some of the other makers of boring machines to try them in the mines, and he (Mr. Thomas) had been told that it was probable they would do so. Of course, they would try their machines at their own cost.

Capt. A. JAMES asked whether Col. Beaumont had made any offer to them since his previous one?—Capt. THOMAS said he had not. They proposed to go on with the Barrow drill for the present. Capt. JAMES said if they could not do the work by machines as cheap as they could by hand labour what advantage was to be gained by having the machines? It would not benefit Cornish mining to pay away money without return.

Capt. THOMAS stated that they had sold during the last 12 weeks the largest quantity of ore ever sold in the same period. It had been sold at nearly 20. 10s. per ton less on an average than in the former 12 weeks; and their labour cost had been between 3000. and 4000. less, and there had been about 12 tons of ore more raised. They were not working the mine unfairly to produce that quantity of tin. (Hear, hear.) They had more than 50 men working six shafts. (Hear, hear.)

Mr. MARK GUY PEARSE said the prospects of the mine were very promising, and it must have been patent to every adventurer that if the sinking of the shaft had not been persevered in their prospects and position would have been very different. Mr. BARRETT thought there appeared to be some difficulty in deciding as to what sort of drill they should adopt in the mine. He could speak from experience as to the Barrow reef drill in the North of England, and he did not see why it should not be adopted at Dolcoath. In the North they were driving for a little more than two thirds of manual labour.—The CHAIRMAN said he believed in the Barrow drill, but from him there was no complaint made against the Barrow drill. He simply thought in the interests of the adventurers that it was right he should tell them what he thought of Col. Beaumont's machine. They were all sailing in the same boat, and he thought that each should do all in his power for the good of the shareholders. (Hear, hear.)

Capt. THOMAS said no one had proposed to take Col. Beaumont's offer in its present form. If he modified it they might try the machine.

The CHAIRMAN then proposed, and Mr. BARRETT seconded, and it was unanimously agreed, that the accounts be received and adopted.

After the meeting there was a dinner, provided over by Mr. Mark Guy Pearse, and on the removal of the cloth the usual loyal and patriotic toasts were drunk.—The CHAIRMAN then proposed "Continued Success for Tin," and remarked that they had of late been much disturbed about the aspect of affairs in connection with mining. The latest he had heard was that tin had been found in the sun—(laughter)—but he would advise them if they issued any prospectus not to take any share there. (Laughter.) The present depressed state was engaging the attention of Cornishmen far and near, and it was certainly calculated to rather upset one's nervous system. After all, they might all fall back upon the old story that the Great Creator of all rules those things as well in heaven as on earth, and he believed that Providence governed the supply of tin as much as anything else. He remembered well a saying by the late Mr. T. S. Bolitho, to the effect that Providence had very kindly and easily so arranged it that no one article was allowed permanently to increase beyond the legitimate demand for it. That he said was especially the case with regard to tin. He (the Chairman) thoroughly regarded that sentiment from his heart, and it gave him comfort and hope. He had every faith in Capt. Josiah Thomas, the manager of the mine, and he believed the day was not far distant when Dolcoath would be able to give a 10. dividend for black tin. His reason for such a belief was that in the reports that day they would observe that they were sinking six shafts with such a miserable price, and for its worth 272. collectively. They might think he was very sanguine and imaginative, but he firmly believed there was some ground for it with such a fact before them. The time might come when the introduction of boring machines with the latest power of the miners roused, and with proper economy, he thought there was some ground to believe that more than he had said would be accomplished. The shareholders in the mine ought to be very thankful to the managers for their judicious management, and the lords for the manner in which the managers had worked their property. (Hear, hear.)

Capt. THOMAS felt exceedingly obliged for the remarks made by the last speaker, and said he could not have done more for the mine if it had been his own. They had another lode in the south of the mine that had never been seen at any point under the 60 ft. level beyond the present south lode. There was also another lode in the north part, which showed the great resources they had in the mine. (Hear, hear.)

Capt. PEARSE also spoke of the resources of the mine. He had sold tin for less than 36s. a ton as far back as 42 years ago.

Capt. Josiah Thomas, Capt. A. James, Mr. Barrett, and Mr. Loam also addressed the meeting, and a vote of thanks to the Chairman terminated the proceedings.

—Western Daily Mercury.

SOUTH CROFTY.—At the meeting, last week, the accounts showed a debit balance of 25060. Captain Josiah Thomas said the prices of tin, copper, and arsenic were all exceedingly low—lower than at any former period—and he believed that if there were anything of a rise in the prices they would realise large profits. The Chairman explained that the meeting instead of being held, as it usually was, at the end of three months, was deferred a month later in consequence of their not having cut the north lode in the 208 cross-cut. As soon, however, as the lode was cut notices were issued convening the meeting. Capt. Thomas, in answer to a shareholder, said he saw no reason why they should not have a good lode in the mine. The characteristics of the lode were very much like those of the lode at East Pool Mine adjoining, and he believed the best plan would be to drive towards East Pool.—Mr. T. T. Whear congratulated the shareholders on the cutting of the north lode. They had been looking out for it for some time past with a great deal of anxiety, and he had no doubt but that it would turn out well. Under the circumstances he was of opinion, and proposed after such satisfactory discovery, that a call of 10s. per share should be made.

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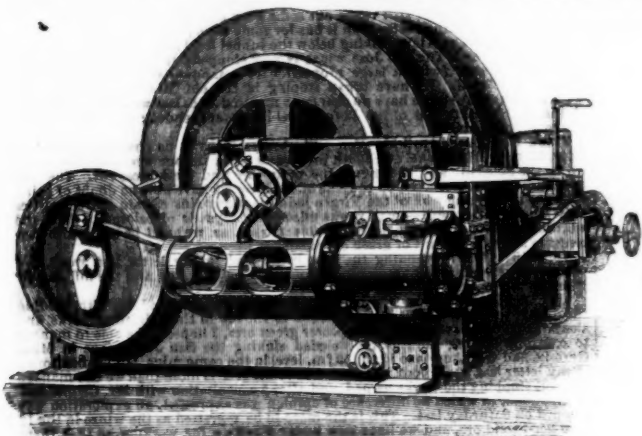
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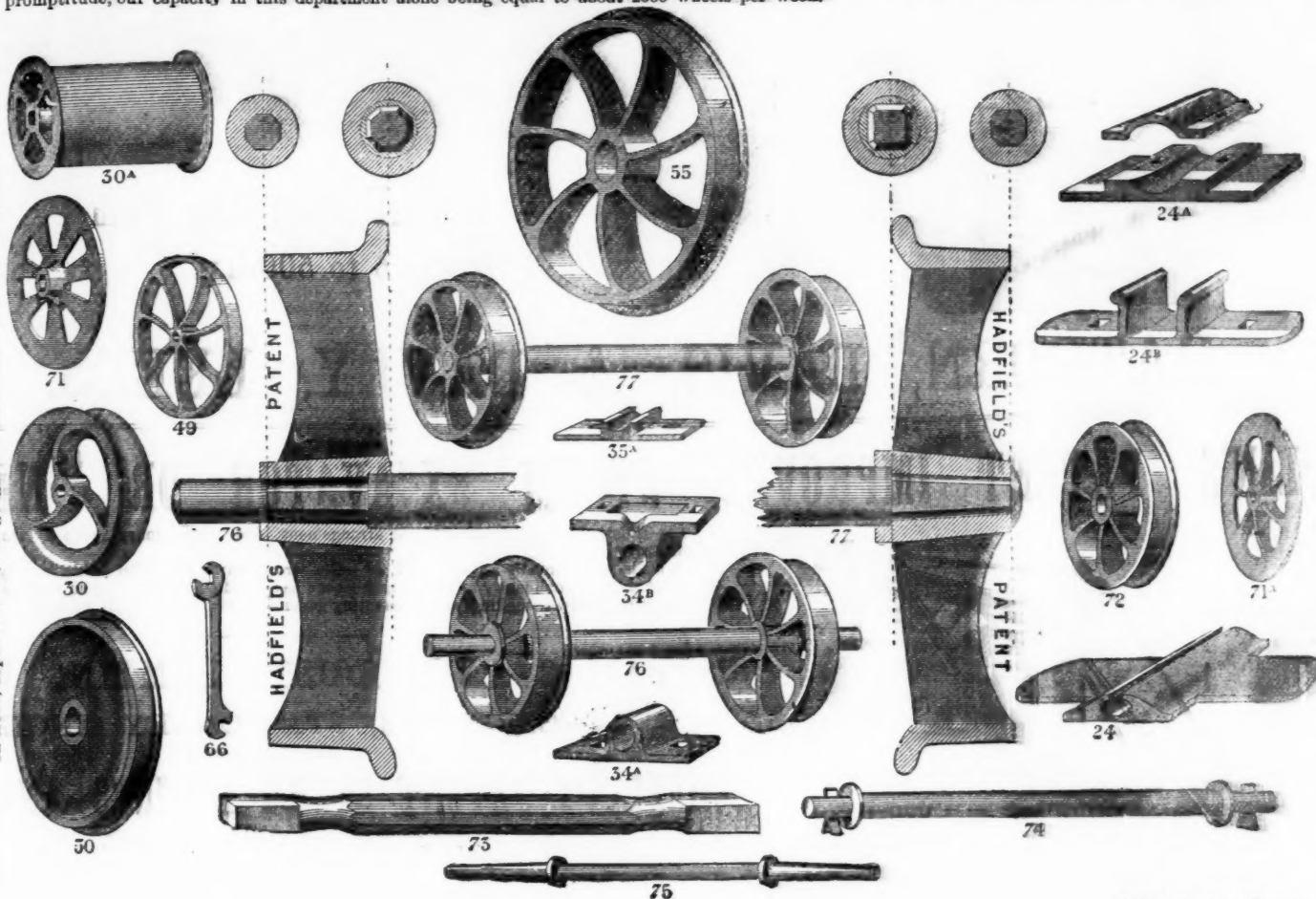
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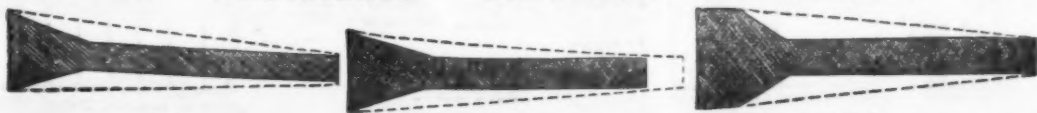
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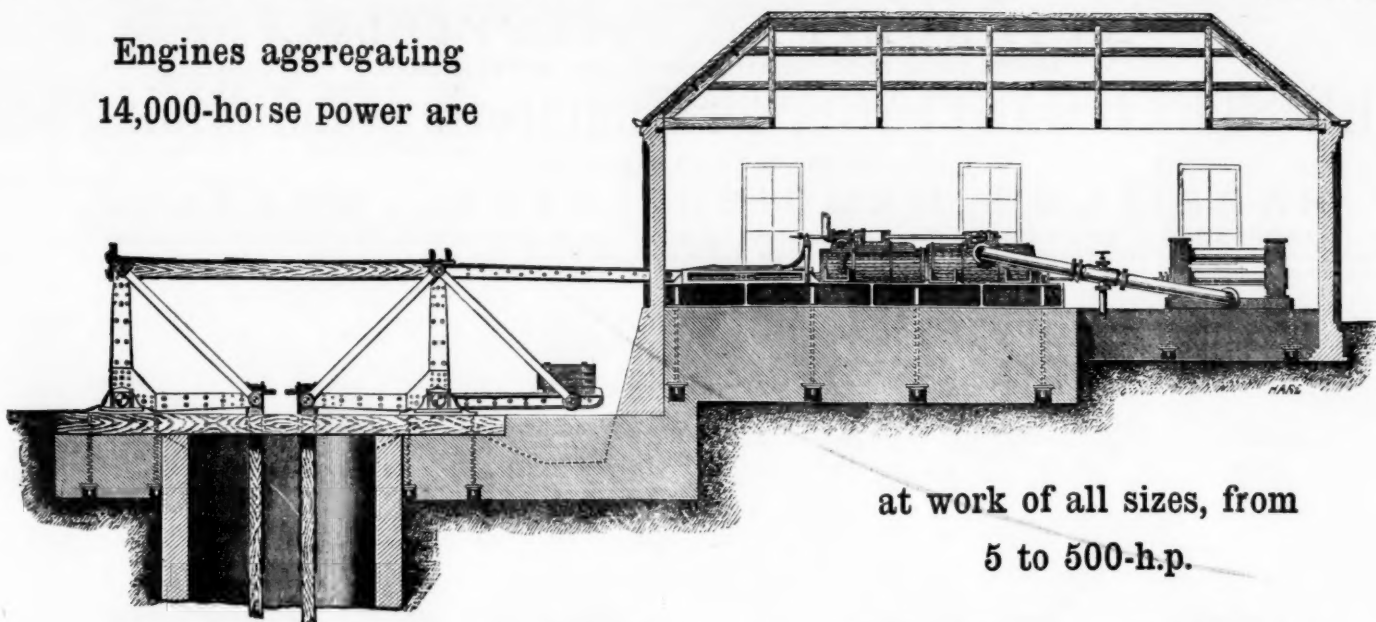
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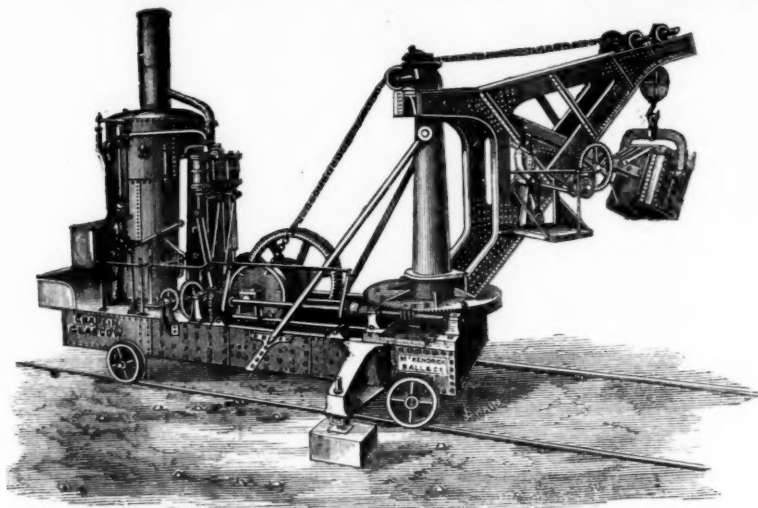
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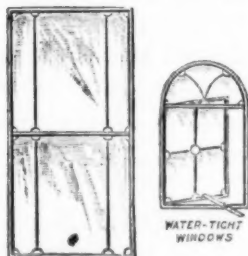
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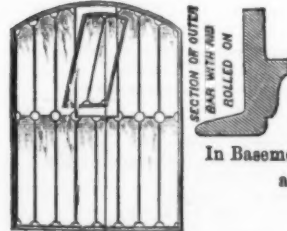
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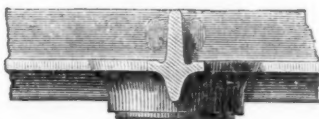
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and Guard Bars are dispensed with.

HOME AND

SOLE MAKER—J. T. HARRIS, Engineer, Ironfounder, and Manufacturer,

SAFE, STRONG ROOM, AND PARTY WALL DOORS, AND EVERY KIND OF CONSTRUCTIONAL AND BUILDERS' IRONWORK, LIFTS, HOISTS, ELECTRIC BELLS AND TELEGRAPHS, &c.
90, CANNON STREET, LONDON, E.C.; AND BEAUFORT IRONWORKS, BRISTOL.

PATENTED IN

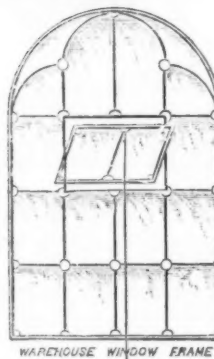


OUTER BAR PLAN

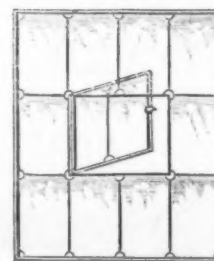
REBATES FOR
CASEMENTS

REBATES FOR
CASEMENTS

SECTION OF
OUTER BAR
TO RUN



WAREHOUSE WINDOW FRAME



FACTORY OR MILL WINDOW FRAME

FRANCE,
GERMANY, AND BELGIUM.

—CAN BE DESIGNED AND MANUFACTURED
TO SUIT ANY STYLE OF ARCHITECTURE
OR POSITION WHERE A WINDOW MAY BE
REQUIRED.

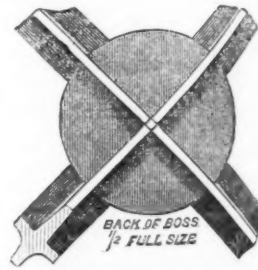
ARE BEING EXTENSIVELY USED IN—

Lunatic Asylums, &c.,
Public Buildings, Banks,
Wharves, Warehouses,
Factories, Mills,
Breweries, &c.,
Engine Houses.

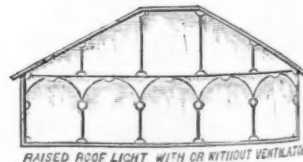
ILLUSTRATED CATALOGUES
ON APPLICATION.

Security is obtained in
these Skylights with-
out Guard Bars, and
with less obstruction
to Light.

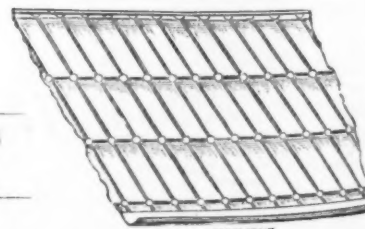
EXPORT.



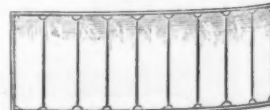
BACK OF BOSS
1/2 FULL SIZE



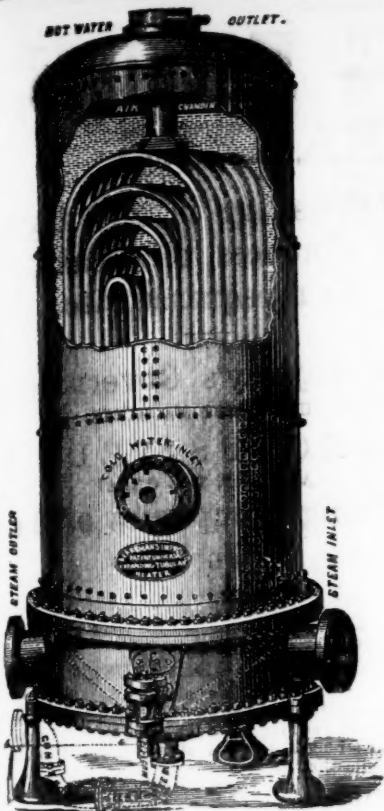
RAISED ROOF LIGHT WITH OR WITHOUT VENTILATOR



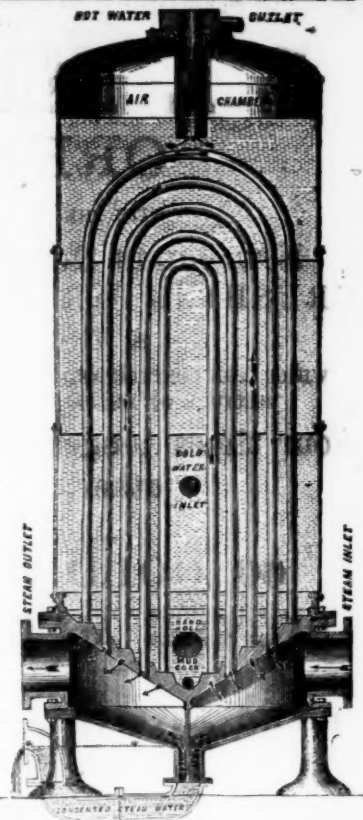
SKYLIGHT



FLOOR OR PAVEMENT GRATING FOR GLAZING



IMPORTANT.
**JOSEPH WRIGHT
AND CO.**
(LIMITED),
NEPTUNE FORGE ENGINE
AND BOILER WORKS,
TIPTON, STAFFORDSHIRE,



Having purchased the Engineering Business lately carried on by R. BERRYMAN AND CO., at 23, Congreve-street, Birmingham, and 28, Wilson-street, Finsbury-square, London, have removed the whole to their Works at TIPTON, to which place ALL COMMUNICATIONS SHOULD IN FUTURE BE ADDRESSED, and where the BERRYMAN HEATER can be seen at work, and in every stage of manufacture.

Being the SOLE MAKERS and PATENTEES of these CELEBRATED COAL SAVERS and EXHAUST STEAM UTILISERS, and having remodelled and greatly improved them, adding largely to their HEATING SURFACE and WATER CAPACITY, J. W. and Co. have put down a special plant, which includes an entire new set of improved patterns, enabling them to offer these FEED WATER HEATERS to the public at

GREATLY REDUCED PRICES.

This arrangement of BRASS TUBES of a great length giving an enormous HEATING SURFACE makes this HEATER not only the MOST POWERFUL ever invented, but its FIRST COST PER FOOT OF HEATING SURFACE IS LESS THAN HALF THAT OF ANY OTHER. It will condense the whole of the Exhaust Steam from the Engine if required, and entirely does away with the NOISE and BACK PRESSURE from exhaust pipes.

ALL THE TUBES ARE OF SPECIALLY PREPARED SOLID DRAWN BRASS AND COPPER; both ends are expanded into the bored holes of the same Tube Plate, METAL TO METAL, and every tube is free to expand and contract independent of each other. Leakage is impossible, as, when the tubes are once fixed, nothing short of cutting out will remove them. No scurf adheres to the tubes because of the difference of expansion between SCURF and BRASS. The inside of the Heater can be washed out by means of the mud cock and hand hole whilst at work.

Only one pump or injector is required, and as the Heater is placed between the pump and the boiler, the water is forced, COLD, into it, and passes out at the top HOT into the boiler direct. Where the WATER WORKS PRESSURE is sufficient no pump or injector is needed.

The water being heated to BOILING POINT UNDER PRESSURE in the Heater, a saving of from 20 per cent. to 25 per cent. in fuel is effected; the disastrous results of grease in boilers are also avoided, the sewage and other loose matter in the water being deposited in the Heater, the acids are liberated there instead of in the boiler.

Every part can be lined with BRASS, COPPER, or LEAD, as may be required in special cases for heating water or any kind of liquor in large quantities for CHEMICAL WORKS, BATHS, WASH-HOUSES, AQUARIA, GREEN-HOUSES, BREWERIES, WOOL WASHING, DYE WORKS, TANNERIES, &c., &c.; they will also HEAT AIR FOR CUPOLAS AND BLAST FURNACES, and are now at work as INTERHEATERS for compound engines with direct steam from the boiler with a further saving of 15 per cent.

The New Price List, with detail information, is now ready, and will be sent on application, together with an Illustrated Catalogue, with references and testimonials from Firms using FOUR HUNDRED AND THIRTY-THREE of these Heaters.

COLEBROOK'S PATENT STEAM PUMPS,
FOR HIGH OR LOW LIFTS AND GENERAL PURPOSES.

SOLE MAKERS,—

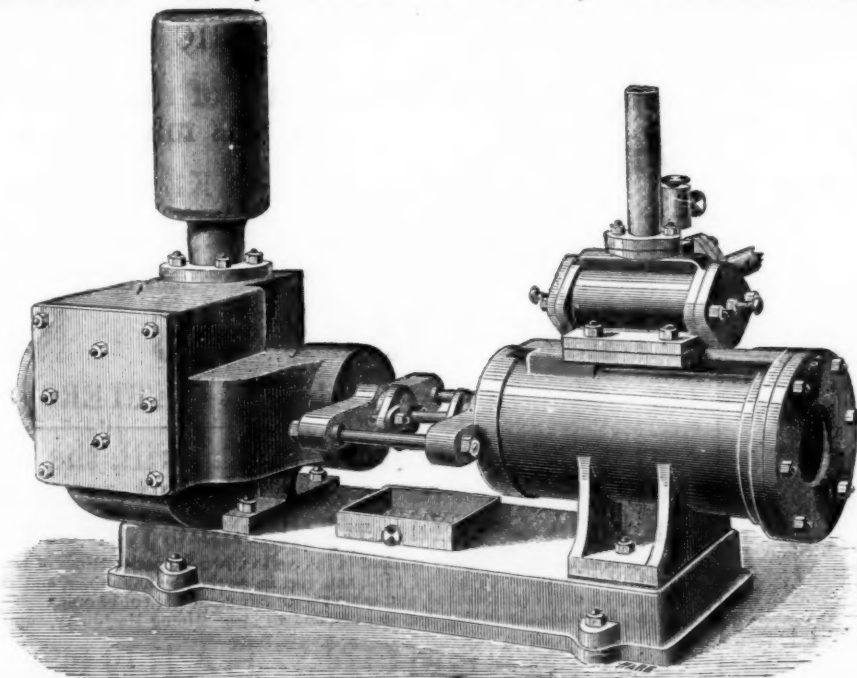
MAY AND MOUNTAIN,
BERKLEY ST., BROAD ST., BIRMINGHAM.

The accompanying Engraving represents a Steam Pump, suitable for general purposes; it possesses the following advantages over any other Steam Pump yet before the public:—

1st.—No tappets, eccentrics, levers, or other mechanical appliances are used to actuate the steam slide valve, but this office is performed by the exhaust steam.

2nd.—The only working parts in the steam cylinder are the piston and slide valve, and as there are no working parts in either the piston or cylinder covers, the full length of stroke is obtained.

3rd.—The slide valve is so easy of access that it can be examined, cleaned, and replaced in a few minutes, and it is impossible to make any error in replacing it



after examination, because it is immaterial which way it is inserted in the valve-box, whether one way or the other upwards, or whether end for end.

The Pump Valves are Colebrook's Patent, and are made in one piece. They are either of canvas, leather, india rubber, or other material, to suit the nature of the liquid to be pumped, and can be replaced in a very short time by any ordinary workman.

These Pumps are suitable for hot or cold water, hot or cold wort, sewage, ammoniacal liquor, tar, &c., and are adapted for use in breweries, chemical works, collieries, paper mills, dye-works, brick-yards, and for almost any other purpose.

SIZES AND PRICES OF COLEBROOK'S PATENT STEAM PUMPS.

Diameter of Steam Cylinder.....Inches	1½	3	3	3	3	4	4	4	4	5	5	5	6	6	6	6	7	7	7	7	8
Diameter of Pump Cylinder.....Inches	1	1½	2	2½	3	2	2½	3	4	3	4	5	3	4	5	6	3	4	5	6	4
Length of Stroke.....Inches	6	12	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Price	£12	£16	£17	£18	£19	£19	£20	£22	£25	£23	£28	£32	£26	£33	£36	£41	£30	£38	£41	£45	£40
Diameter of Steam Cylinder.....Inches	8	8	8	8	9	9	9	9	9	10	10	10	10	10	10	12	12	12	12	12	...
Diameter of Pump Cylinder.....Inches	5	6	7	8	5	6	7	8	9	5	6	7	8	9	10	6	7	8	9	10	...
Length of Stroke.....Inches	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	...
Price	£45	£50	£56	£65	£50	£55	£60	£70	£81	£62	£68	£70	£80	£95	£100	£80	£85	£90	£100	£115	...

H. R. M. will exhibit in full operation at the Bath and West of England Show, at Oxford, June 10th to 14th, one of his New Patent Stonebreakers, with screening apparatus, and on wheels to travel; also fitted with his new patent toggle bearing and drawback motions, and reversible planed back cubing jaws in sections.

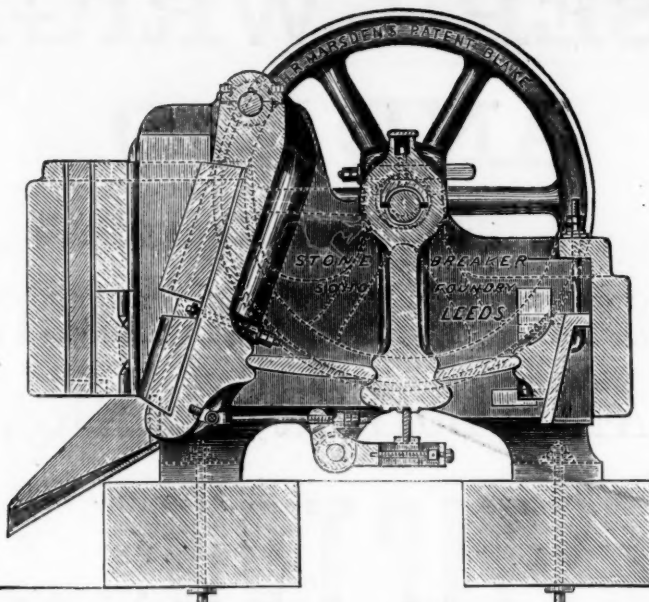
H. R. MARSDEN, PATENTEE AND ONLY MAKER BLAKE MACHINES, OF THE WELL-KNOWN ORE CRUSHERS AND STONE BREAKERS,

WITH THE
New Patent Reversible
CRUSHING OR CUBING
JAWS,

WHICH ARE CONSTRUCTED OF A PECULIAR
MIXTURE OF METAL, WEARING
Four times longer than any
other.

60 GOLD AND
SILVER MEDALS.

OVER 2000 NOW IN
USE.



For Crushing to any degree
of Fineness, or Breaking
to a required size.

Her Majesty's Government
USE THESE MACHINES
EXCLUSIVELY,
ALSO ALL THE GREAT
Mining Companies of the
World.

H. R. M. has long observed the want of cheaper
machines,
STONE AND ORE CRUSHERS,
And has at length, by means of improved appliances
for the production thereof, been enabled to reduce
the prices, yet keep up at the same time the well-
known strength of construction. Reduced prices
on application.

FIFTY per Cent., and upwards, saved by using these Machines.

TESTIMONIAL FROM MESSRS. JOHN TAYLOR AND SONS.

DEAR SIR,—We have adopted your Stone Breakers at many of the mines under our manage-
ment, and are pleased to be able to state that they have in all cases given the greatest satisfac-
tion. We are, yours faithfully,
JOHN TAYLOR AND SONS.

H. R. Marsden, Esq.

INTENDING BUYERS ARE CAUTIONED AGAINST PURCHASING OR USING ANY INFRINGEMENT OF THE NUMEROUS PATENTS OF H. R. MARSDEN.
ILLUSTRATED CATALOGUES, TESTIMONIALS, and every information, on application to—

H. R. MARSDEN, SOHO FOUNDRY, LEEDS, ENGLAND.
ONLY MAKER OF SAULT'S PATENT SYPHON CONDENSER.

DEAR SIR,—I have broken over 40,000 tons of very hard LIMESTONE into ROAD METAL, for
the Newport and other Road Trusts, in your PATENT STONE BREAKER, AND ALL WITH
ONE PAIR OF JAWS, which are STILL IN USE. I do not think at all, but am quite sure yours
are the only Machines which fully perform the work you set them out to do, and there are none
in the Show can at all compare with them.
Yours, truly,
WILLIAM PRICE, Contractor, Gold Cliff, Monmouth.

Royal Agricultural Show, Liverpool, July, 1877.

TO COLLIERY AND MINE OWNERS.

R. HUDSON'S PATENT STEEL CORVES OR "TRAMS."

Patented July, 1875, and January, 1877.

Entire new principle, saving three-quarters to 2 cwt. "dead" weight per corve. Will hold 2 to 3 cwt. more coal than the ordinary kind, without increasing the outside dimensions. Adopted by—
Messrs. THOMPSON, WISE, & Co., Burry Port, South Wales.
Messrs. DYMOND'S Liversedge Coal Company, near Leeds.
Messrs. W. ACKROYD and Bros., Morley, near Leeds.
Messrs. CLAYTON and SPEIGHT, Farnley, near Leeds.
Messrs. JAS. WORMALD and Sons, Rawdon, near Leeds.
KINGSWOOD COAL and IRON CO., near Bristol.
MIDDLETON COLLIERY CO., near Leeds. | NEWTON COLLIERY, near Castleford. | Messrs. RUSHPORTH and Co., Adwalton, near Leeds. | T. VAUGHAN and Co.'s TRUSTEES, South Medomsley Colliery; and others.
Messrs. BARING, GOULD, & ATKINSON, Diamond Fields, South Africa.
Messrs. KIMBERLEY, Diamond Mines, South Africa.
Mr. HASELDEN'S Lead Mines, Linares, Spain.
FRYSTON COLLIERY CO. (Limited), Castleford, near Leeds.
HOWDEN CLOUGH COLLIERY CO. (Limited), near Leeds.
Messrs. R. HOLLIDAY and Sons, Ardsley, near Wakefield.
HARDWICK COLLIERY CO., Clay Cross, near Chesterfield.
WEST YORKSHIRE IRON and COAL CO. (Limited), Tingley, near Leeds.
WM. BAIRD and SON, Coatbridge, near Glasgow.
BETTSFIELD COLLIERY COMPANY, Bagillt, Wales.
EDFORD COLLIERY COMPANY, near Bath.
Messrs. JAS. FUSSELL, Sons, and Co., Frome, Somersetshire.

R. HUDSON, Engineer and Ironfounder, Gildersome Street Foundry, near Leeds (Five minutes walk from Gildersome Station, G.N.R.)

The Barrow Rock Drill COMPANY

Are NOW PREPARED to SUPPLY their DRILLS, the ONLY
ONES that have been SUCCESSFULLY WORKED in the
MINES of CORNWALL. At DOLCOATH MINE, in the
HARDEST known ROCK, a SINGLE MACHINE has, since
its introduction in July, 1876, driven MORE THAN THREE
TIMES the SPEED of HAND LABOUR, and at TWENTY PER
CENT. LESS COST PER FATHOM.

In ordinary ends two machines may be worked together,
and at a proportionately increased speed. They are strong,
light, and simple, easily worked, and adapted for ends and
stopes, and the sinking of winzes and shafts.

The company are also prepared to SUPPLY COMPRESSORS,
and all necessary appliances for working the said Drills.

Apply to—

LOAM AND SON,
LISKEARD, CORNWALL.

IMPROVED STEEL WIRE FOR ROPES.

WEBSTER & HORSFALL,
(ORIGINAL PATENTEES),

MANUFACTURERS OF IMPROVED STEEL WIRE FOR ROPES
FOR COLLIERIES,

RAILWAY INCLINES, PLOUGHS, HAWSERS, &c.
SOLE MANUFACTURERS of the HOMOGENEOUS WIRE for the
ATLANTIC CABLES of 1865 and 1866.

WEBSTER AND HORSFALL,
BIRMINGHAM.

THE GREAT ADVERTISING MEDIUM FOR WALES.
THE SOUTH WALES EVENING TELEGRAM
(DAILY), and
SOUTH WALES GAZETTE
(WEEKLY), established 1857,
the largest and most widely circulated papers in Monmouthshire and South Wales
CHIEF OFFICES—NEWPORT, MON.; and at CARDIFF.

The "Evening Telegram" is published daily, the first edition at Three P.M., the
second edition at Five P.M. On Friday, the "Telegram" is combined with the
South Wales Weekly Gazette, and advertisements ordered for not less than six
consecutive insertions will be inserted at a uniform charge in both papers.
P.O.O. and cheques payable to Henry Russell Evans, 14, Commercial-street,
Newport, Monmouthshire.

THE IRON AND COAL TRADES' REVIEW.
The IRON AND COAL TRADES' REVIEW is extensively circulated amongst the
Iron Producers, Manufacturers, and Consumers, Coalowners, &c., in all the iron
and coal districts. It is, therefore, one of the leading organs for advertising every
description of Iron Manufactures, Machinery, New Inventions, and all matter
relating to the Iron, Coal, Hardware, Engineering, and Metal Trades in general.
Offices of the Review: 7, Westminster Chambers, S.W.
Remittances payable to W. T. Pringle.

THE "CHAMPION" ROCK BORER

MINE AND QUARRY STANDS, STEEL DRILLS, SPECIALLY PREPARED INDIARUBBER HOSE, TESTED
IRON PIPES, &c.

Air-Compressing Machinery,

Simple, strong, and giving most excellent results, and
ELECTRIC BLASTING APPARATUS.

Full particulars of rapid and economical work effected
by this machinery, on application.

CONTRACTS TAKEN, OR SPECIAL TERMS FOR HIRE.

ULLATHORNE AND CO., Mechanical and Consulting Engineers,
63, QUEEN VICTORIA STREET, LONDON, E.C.

THE ROANHEAD ROCK DRILL.

BY ROYAL LETTERS PATENT.

This justly-celebrated Rock Drill, the only one invented that will
work in the hardest rock without more than the usual repairs re-
quired by any ordinary machinery, is now offered to the public.

It has been most successfully worked in the well-known Hematite Mines of Lancashire and Cumberland. Will drive 50 to 60 ft.
in hard rock without change of drill, and can be worked by any miner, and kept in repair by any blacksmith. It is the most
simple rock drill ever invented, and cannot with fair usage get out of order.

Plans, Estimates, including Compressors, and all other Mining Machinery, supplied on application to the sole makers,—

SALMON, BARNES, AND CO.,
MINING ENGINEERS.

Canal Head Foundry and Engineering Works, Ulverston.

J. WOOD ASTON AND CO., STOURBRIDGE

(WORKS AND OFFICES ADJOINING CRADLEY STATION),

Manufacturers of

CRANE, INCLINE, AND PIT CHAINS,

also CHAIN CABLES, ANCHORS, and RIGGING CHAINS, IRON and STEEL SHOVELS, SPADES

FORKS, ANVILS, VICES, SCYTHES, HAY and CHAFF KNIVES, PICKS, HAMMERS, NAILS,

RAILWAY and MINING TOOLS, FRYING PANS, BOWLS, LADLES, &c., &c.

Crab Winches, Pulley and Snatch Blocks, Screw and Lifting Jacks, Ship Knees, Forgings, and Use Iron of all descriptions.

STOURBRIDGE FIRE BRICKS AND CLAY.